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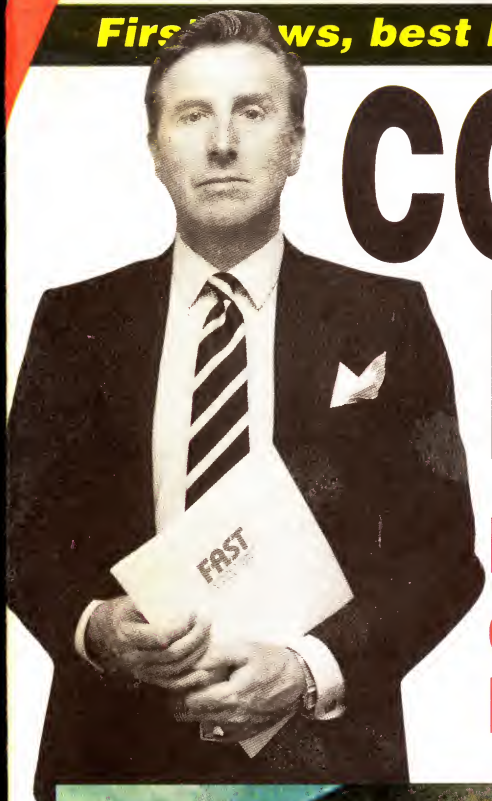
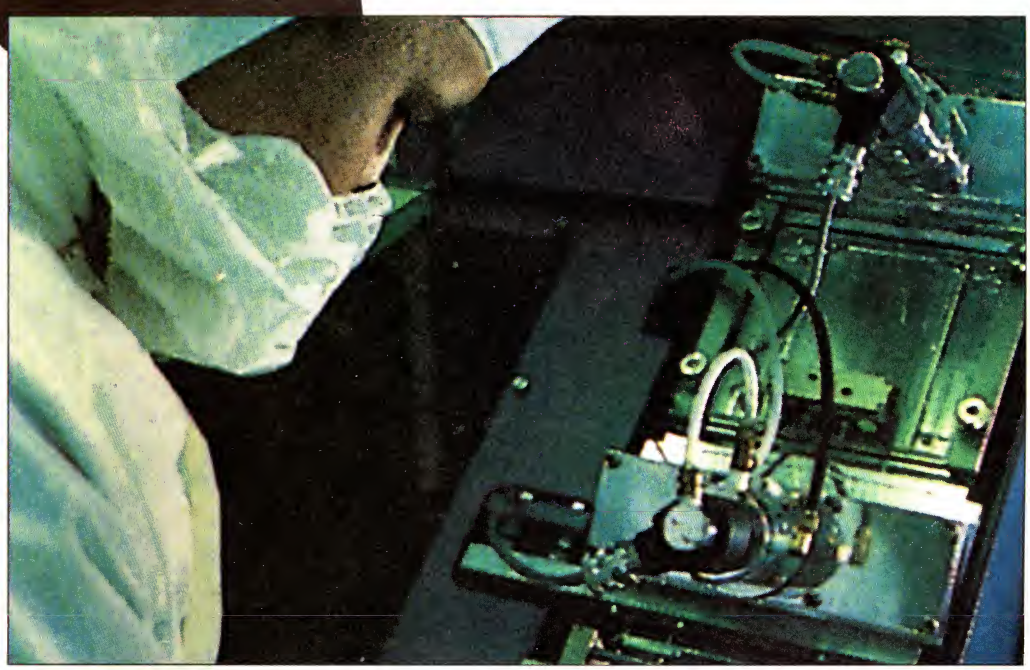


COPYING FIASCO

FAST powerless to act on anti-copying law loophole – page 2



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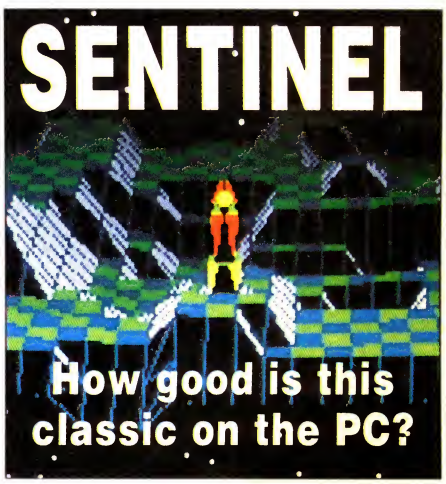

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IT'S A FARCE

• Copyright crackdown scuppered
• Piracy kits to dodge new law

Attempts to crack down on software copying devices have failed.

The special clause which was inserted in last year's Copyright and Data Protection Act attempting to ban copying gadgets has been proved to be virtually useless. Simple loopholes mean manufacturers can carry on selling the dongles after the Act comes into effect on August 1st.

Manufacturers advertising the controversial gadgets are publicising the Copyright Law change on that date as being the last time you will be able to buy their devices. However, as the loopholes emerge many are considering reversing that decision.

All a manufacturer has to prove is that its copying kit can be used for legal purposes such as backing up disks. The potential for piracy is not enough to outlaw any product. It works on the same premise that it is not illegal to buy a car which can break the speed limit. According to the law, the choice is with the consumer.

• Hay feverish: Loopholes keep his hands tied

Copycat widgets are enormously popular amongst users of home micros, with tens of thousands sold every year. Although they are mostly used for backing up disks, many see them as an open invitation to piracy. FAST (the Federation Against Software Theft) had forced through a law in an attempt to outlaw them.

But manufacturers are beginning to realise that they can still sell their dongles so long as they follow simple guidelines.

If the adverts publicising the gadgets don't refer to their potential powers as illegal piracy aids the manufacturers are in the clear. In effect, the term "back-up device" is enough to make it a perfectly respectable add-on for your machine.

Both Power Computing and Trilogic (which sell the Blitz and Expert devices respectively) have admitted that they are considering selling their dongles after the August deadline. Trilogic's Graham Kelly told *Express*: "We're talking to our solicitor tomorrow and then we'll make a decision. If we can legally sell them then obviously we will."

He said the current ad campaigns by his and other companies are "very honest" since many have still not decided one way or the other. Most ads say the new law "may" or "could" mean these products will not be available after August 1st rather than "won't". Romantic Robot has said it "will not" sell its Multiface for the ST after this month. However, partner Ondreg Korinek told Express: "We will have to consider this very carefully. It would be very dangerous to sell something illegally. But there is still a massive demand for the Multiface. We have already said we won't sell it but it's worth looking at this situation."

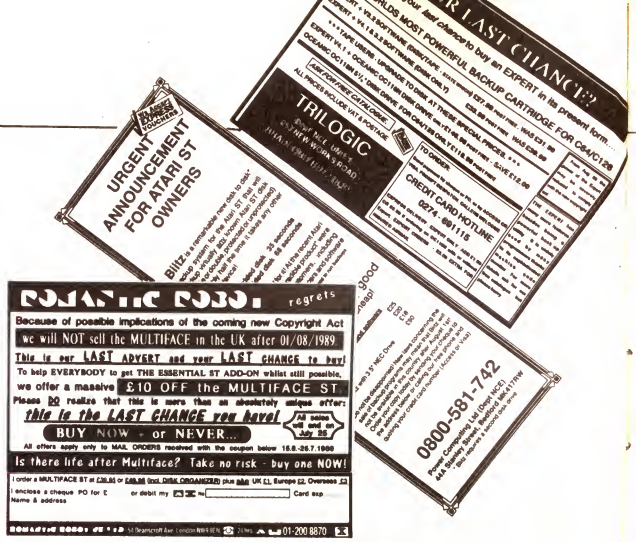
Graham Kelly called the affair "completely ridiculous". He added: "FAST has spent all this time pushing it through but it's worthless".

FAST's Bob Hay explained that any device with the sole purpose of piracy would be illegal. But if something could purport to have more honourable uses it would be completely legal even if it could be used for piracy.

He said: "I've certainly not got any intention of trying to bring cases against these manufacturers after August 1st if they carry on selling them. But if someone starts complaining then we may have to act."

This convoluted tangle of restrictions and loopholes has left many wondering what the point of the law is concerning copying aids. Power Computing told *Express* that it is "looking closely at the situation".

All are hoping that their solicitors will find a way to avoid potentially expensive litigation with a software publisher trying to prove that its program was pirated using such a device. The publishers, which detest these products, will no doubt also be talking to its legal experts.■


URGENT ANNOUNCEMENT FOR ATARI ST OWNERS
TRILOGIC
0800-581-742
ROMANTIC ROBOT regrets
Because of possible implications of the coming new Copyright Act
we will NOT sell the MULTIFACE in the UK after 01/08/1989
This is our LAST ADVERT and your LAST CHANCE to buy!
we offer a massive £10 OFF the MULTIFACE ST
this is the LAST CHANCE you have!
BUY NOW - or NEVER...
Is there life after Multiface? Take no risk - buy one NOW!
01-200 8870

• The power of advertising: But they don't tell the whole story

What is a back up device?

It usually comes in the form of a dongle which plugs into your computer's cartridge port.

To use it you simply boot the software you wish to back up, then, at a strategic point in the program, you press a button on the dongle which issues a signal to the processor which stops it in its tracks.

The entire contents of the memory are then dumped onto an awaiting disk. Many won't let you run the back up without the dongle being present in the cartridge port. This has the effect of making commercial piracy through the dongles extremely difficult..

However, some modern gadgets don't require the constant presence of the dongle...

Sounds familiar

Last year Amstrad was told by a judge that its tape to tape audio cassette decks could be sold legally.

Record companies had tried to stop the machines being sold because of their potential to spread illegally taped recordings. But the judge decided that having the potential to make illegal copies was not enough to warrant a ban, since the machines also have legitimate uses.

As it is up to the buyer to decide what use to put their machine to, it is not illegal to sell tape to tape machines. If similar reasoning is applied to copying kits, they can continue to be sold legally.

Virgin on the ridiculous

Software house Virgin/ Mastertronic has opened its arms to the excesses of Monty Python for a new computer game.

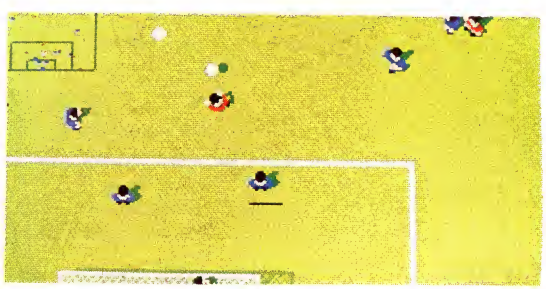
The designers have been given the task of incorporating the Python team's bizarre humour into the game which should arrive early next year. Cult sketches such as The Ministry of Silly Walks, The Dead Parrot and I've Come For an Argument are hoped to be incorporated.

This year sees the 20th anniversary of the television show and repeats will be dutifully wheeled out.

• Nudge nudge, wink wink, etc etc...

Virgin/ Mastertronic's boss Nick Alexander is a bit of a Python. "As part of the generation that grew up with Monty Python it's particularly exciting to be working on this game. My Dad actually smuggled me into a couple of the recordings back in the late 60's," he confessed.■

Putting the right foot forward



Computer football's golden boy Dino Dini is currently working on what is being heralded as the ultimate in soccer gaming.

He hopes to incorporate the blistering (and acclaimed) gameplay in his *Kick Off* with more tactical aspects in a new game called *Player Manager*. That should be arriving in the late autumn on 16-bit machines.

Gamers are promised complete control over the tactical attributes of each player on his team. Currently, *Kick Off* enjoys little in the way of cerebral forward planning. More from publisher Anco on 0322 92518.■

SUPER ST: TRAMIEL TALKS ...

Atari last week continued its barrage of bold claims and new product announcements with talk of its top end upgrade to the ST.

The firm's long awaited TTP (not to be confused with the STE) will offer three modes of operation. Atari's boss Sam Tramiel told *Express* that the TTP will run TOS 1.4 as well as MS-DOS and Unix 5.31.

Whilst the STE will be an upgraded machine costing the same as the current ST, the TTP is likely to weigh in at around £1,000.

It was to be called the TT although Atari, for unknown reasons, has changed that to TTP. Curiously, the P stands for Plastic.

"On the 25th of August in Dusseldorf many machines that people have been waiting for will be shown. The TTP, in its various RAM configurations, will be there," said Tramiel.

The TTP will feature a 68030 chip. Tramiel said its high profile launch will benefit the ST because of its compatibility. Its high resolution mono monitor will offer 1280 x 960 pixels. Medium resolution is 640 by 480 and low resolution, which will give you 256 colours on screen from a palette of 4096, will be 320 by 480 pixels.

Meanwhile, Tramiel enthused over his handheld games machine – which has been christened the Lynx. Part of Atari's plans for the next five years is to "kill Nintendo". Nintendo has launched a black and white handheld machine but Atari's colour effort is generally regarded as better. Tramiel expects to sell a million Lynxes by the end of next year.

• The amazing ST: Tough talking

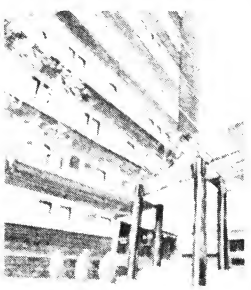
Amstrad's busy bodies

It's not all doom and gloom at Amstrad Towers.

In the same week that the one time Brentwood beastie boys share price dipped to its all time low the firm was once again been commended as the most productive in Britain.

Each Amstrad employee (and there are, on average, 1,424 of them) sold nearly £440,000 worth of kit for the firm in 1988. Each one of them made Amstrad a scrumptious £112, 640 during that year.

The firm manages to keep profits high against numbers of workers by importing all its kit. Much of the labour is done comparatively cheaply in the Far East. Amstrad boss Alan Sugar is well known for getting the best out of his employees. Luxuries such as impromptu tea breaks are frowned upon.



• Amstrad Tower System: Working hard

Despite its hard working reputation City boffins are predicting Amstrad's 1989 performance won't be so rewarding. Influential analyst BZW last week lopped £40 million off its original profits forecast. Amstrad shares promptly tumbled to an all time low of 68p. At one point this year they were riding at 193p.

Nana nana nana nana

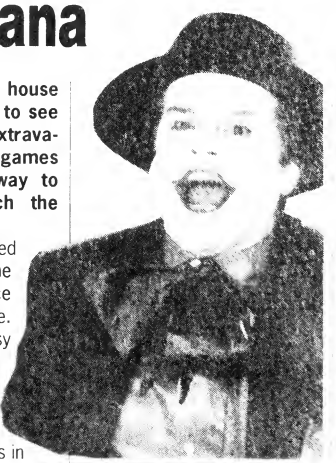
Movie mad software house Ocean was so keen to see the new *Batman* extravaganza that it sent games designers all the way to New York to catch the action.

The Manchester based software house has the licence to reproduce the game of the movie. And being the fussy types they wanted to see the film before putting code to computer.

However, Warner was in no mood to send any copies of its precious picture to a bunch of programmers in the north of England. So Ocean packed its two designers off to Times Square.

"We'd seen rushes of the film and the script so we knew what it was all about," explained the programming manager Gary Bracey. "But we wanted to get a proper feel for it. It's a very dark and atmospheric film."

Batman should be out later this year.



• No joke: Ocean flew to New York for this man

Foul mouthed virus rears its ugly head

A bizarre new virus ridiculing the world's political leaders has been located in various PCs in the UK.

Called the *Fu Manchu* virus it places boorish messages in the printer buffer each time the name of a well known political figure is typed. Because the offending messages don't appear on the VDU, printed documents could be mailed out featuring offensive material.

Former US president Ronald Reagan, Austrian Premier Kurt Waldheim, South Africa's former Premier PW Botha, Mikhail Gorbachov and Margaret Thatcher are all featured. When any of these names are typed in the message "is a *****" is added. (The actual text is unprintable.)

This is one of a growing number of politically motivated viruses in circulation.

Kuala Lumpur pirates sunk

The battle against software piracy is reaching every corner of the globe.

Last week six shops in Kuala Lumpur were raided by trade officers working on behalf of WordStar. The word processing and business software company was just sick and tired of its products being ripped off by oriental cowboys and decided to take action.

The pirates will be prosecuted under a new Malaysian copyright law which takes software into account. Now WordStar says it is after the Far Eastern "big fish" who are organising widespread piracy.

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COMMENT

The attempts to stop companies selling copying devices are proving totally futile.

Crackers love these little gizmos which attach on to the back of their machines and enable them to freeze games and make backup copies, circumventing the copy protection schemes many software houses use to prevent piracy.

The interface can be a genuinely useful tool, for backing up and harmless hacking – examining of program code with a view to rewriting it for your own amusement. The producers have always defended themselves against accusations that they are helping piracy by pointing out that you need the interface to run the copies you've made, preventing large-scale piracy. It's just another harmless bit of kit, they say.

However, some interfaces, such as the Blitz for the ST, make it quite clear in their adverts that games copied with their device don't need the device to run it. And after August 1st all a company has to do to sell its copying devices legally is to talk about the legitimate backup uses of their product and let the customer decide for themselves whether to pirate software. The anti-piracy laws of last year are so easily got around they are next to useless.

Record companies have tried getting a levy on blank cassettes to compensate for their loss of earnings from music piracy, they've tried outlawing tape-to-tape audio cassette machines, they've even tried playing the pirates at their own game by selling music cassettes with a blank side for your own recording. And music piracy is bigger than ever.

But the music industry has been big enough to take piracy; it is not nearly as certain that the software industry can stand it. It looks increasingly as though software pirates are winning.

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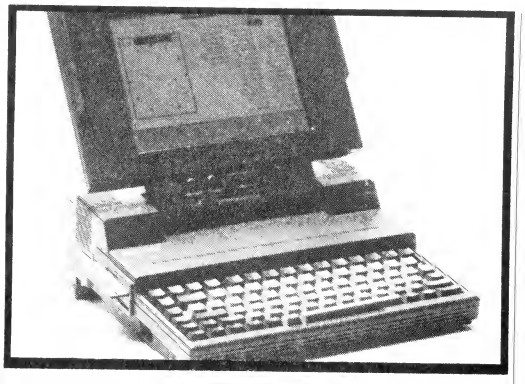
PICKING UP THE PCs

Hapless London commuters are taking positive action against the recent spate of train and tube disruptions – by renting out PC portables.

Leading PC portable rental supplier Micro-Rent has reported a 50% increase in PC portable rentals over the past month.

Ever since the British Rail dispute started to seriously affect London's workforce, people have been turning to PC portability to avoid the traffic chaos.

Micro-Rent's Rental Sales Manager Philip Pain told *Express*: "The majority of our clientele over the last few weeks have been management consultants and top executives from Big City firms. The most popular models are the Compaq and Toshiba 286/386 machines – a Compaq SLT/286 costs £170 per week."



• Portable power: Commuters are staying at home

Bain added: "We've had to invest heavily in new machines to cope with the increased demand."

Meanwhile, one of Micro-Rent's competitors, Vernon Rentals, has also experienced a growth in PC portable rentals.

David Young, Vernon's Managing Director said: "We currently have no PC portables in our Rental Pool – PC portable rentals account for approximately 15% of our business."

But PC rental firm CCA was having difficulty cashing in on the mini boom. None of its staff were available for comment since they hadn't managed to overcome that day's rail strike!

Anybody interested in renting out their own deck can contact Micro-Rent on 01 700 4848, Vernon Rentals on 01 720 7000, or CCA on 01 580 4766.

Show goodies promised

New features and special gimmicks appear to be on the agenda of this weekend's BBC Acorn User Show.

Acorn and organiser Database have been working overtime putting together Beeb and Archimedes owners.

● Acorn will be letting loose its key backroom brigade for a series of high brow seminars. William Stoye, designer of RISC OS will be talking about his creation, as will Roger Wilson, designer of the BBC BASIC interpreter. Other knowledgable types from Acorn will also be on hand at the event.

● Database has employed a bunch of lads from a public school in Bedford to help carry all new Archies bought from the stands to awaiting cars outside. The publicity conscious firm even dragged the boys out of classrooms for "training sessions" (see photo).

● Seven hampers, each crammed with more than £1,000 worth of software, are being given away.

Visitors need only fill in a form when they enter Alexander Palace to be in with a chance.

● Local youngsters are to be invited in for what is being described as "a marathon zapping competition". High scorers can win up to £1,000 for their school.

● Acorn will be presenting a brand new Archie to the winner of last week's *Express* competition.

The big event for Acorn users kicks off on Friday at the West Hall in London's Ally Pally.

• Shaping up: Archie porters make ready

Good as gold

Following Microlink's decision to jump ship from Telecom Gold to Istel, Gold has decided to offer its users an alternative.

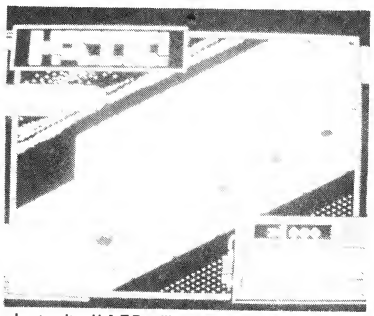
People using Microlink but wishing to stick around with Telecom Gold can use standard Telecom Gold facilities as well as the ability to retain an existing mailbox number.

Users are also being offered a combined Telecom Gold and Micronet account. This will cost standard Micronet charges although anyone who applies for either of the offers before the end of September will get a three month free subscription.

Sentient slips away

Four year old games programming house Sentient has slipped into liquidation.

The firm, which was responsible for games such as *H.A.T.E*, *Taipan*, *WEC Le Mans*, and *Games: Summer Edition* says it simply could not compete.



• Last write: H.A.T.E. will be one of Sentient's last offerings

Boss Tony Fagelman said debts are "very substantial". He added: "I'm very very sad that this should have happened. It's not something we've known was coming for a long time. It just reared its ugly head."

As a result eight talented programmers are currently scouring the games industry looking for work.

Gainstar-ing ground

Fledgling games software developer Gainstar is planning to bring out ten to fifteen new games before the end of the year.

Among the titles due for release are *Raider of the Wind*, a horizontally-scrolling shoot-'em-up out in September on Amiga. *Hercules and Helm*, first-person solid 3D variations of Gainstar's popular hack'n'slash game *Sword of Sodan* will be out by Christmas on ST, Amiga and PC. Others planned include 16-bit *Dungeon Master* and *Elite* type games later in the year.

Not content with games, Gainstar also has a sound sampling software package for the ST with four channel capability and MIDI options, priced in the £20 to £30 region, a PC word processor, and a compactor utility for the Amiga which "doubles the space on an average disk".

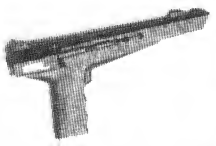
Further details on 0276 20144.

CODEMASTERS GUN SURPRISE

Codemasters and joystick manufacturer Cheetah are secretly teaming up to produce an all-in-one light gun package for gamesters.

The Cheetah light gun – called Defender – has been in development all year. It will be sold along with six specially made Codemasters games. All will make full use of the light gun which Cheetah boasts has more features than Amstrad's new model.

The six games are *Bronx Street Cop, Billy the Kid, Harrier Attack, Haunted Castle, Super Car Trans Am* and one other to be announced. The price of the package is likely to be less than £30. It will initially be available for the Spectrum and C64.



• Shooting match: Amstrad's gun

• Going great guns: Codemasters' Darling brothers

Codemasters' youthful boss David Darling commented: "We've got a reputation for producing the best games around, and Cheetah is renowned for their top quality joysticks. Together we'll make a highly successful partnership."

Both firms are forecasting sales of more than 200,000. Cheetah boss Howard Jacobson told *Express*: "We wanted to get some fresh games together rather than a load of old rubbish off the shelves, so we asked Codemasters to put them together. We think it's going to be very exciting."

The duo aren't planning to release the pack on 16-bit machines. Both feel the user base is, as yet, too small to make it worthwhile.

Phantom arrives

• Good spirits: Phantom modem now out with special offers

Spectre has just launched its new modem the Phantom 3 with a special offer to go with it.

Anyone with an old modem can trade that in at Spectre for a £30 discount – the Phantom 3 costs £130. Spectre reckons its new baby is ideal for upgraders since it can be used either as a manual connect, or an AT command set modem. More on 09315 362.

Intel chips in to PC debate: backs EISA

IBM's attempts to control the standard for the next generation of PCs with its micro channel bus is weakening with the launch by Intel last week of a rival chip.

The new chip is based on Extended Industry Standard Architecture (EISA) which is IBM's rival. Already EISA has been endorsed by Compaq as well as twenty other PC manufacturers. All of these companies are currently designing new PCs which will use the chip.

Olivetti, Zenith, Tandy, Hewlett-Packard, NEC, Epson and Compaq all say they will have EISA machines before the end of this year.

Intel also produces a micro channel chip but that is mainly supplied to IBM. Although other manufacturers are using IBM's standard they seem to be doing so half-heartedly.

IBM had hoped to dominate the world's PC standards completely, thereby making all machines compatible with its software. EISA claims that its standard mean companies which have invested millions in today's standards can upgrade easily.

Intel's launch and the PC manufacturers' commitment to EISA means that most probably neither bus will become standard. Too many people have invested too much in IBM already.

Are you a techie?

Youngsters who fancy themselves as technical whizzes might be interested in the CREST awards, now sponsored by micro distributor Rapid Recall.

The award for Creativity in Science and Technology goes to schoolchildren who set up excellent projects with a scientific leaning. One scheme currently running is a "computer penfriend" service linking a school in High Wycombe to one in Japan via modems.

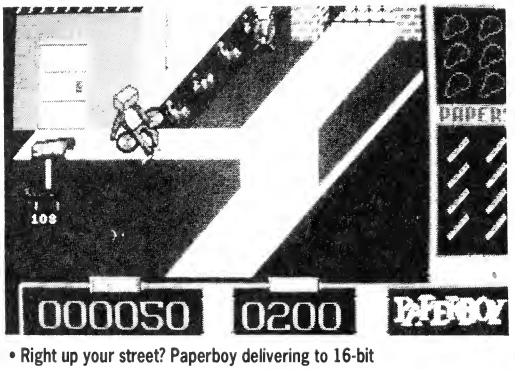
The scheme is worked on a 50/50 basis between the school and Rapid Recall. It works in much the same way as the Duke of Edinburgh award scheme with bronze, silver and gold awards given out to children who complete projects.

Rapid recall says it wants to sponsor the scheme because it encourages young people to "discover the exciting aspects of technology". It says this will help attract more people to work in the technology field.

Paperboy is back

Elite's biggest games from the past few years are soon to be made available to ST and Amiga owners.

Classics such as *Paperboy, Overlander* and *Ghosts 'n Goblins* have been converted over the past few months. All fared well on 8-bit machines a few years ago with *Paperboy* becoming one of the best selling games of all time.



• Right up your street? Paperboy delivering to 16-bit

TOP 20 *Full Price* GAMES

1	**Robocop** OCEAN *Spectrum, C64, CPC, ST, Amiga, Others*		1
2	**Forgotten Worlds** US GOLD *Spectrum, C64, CPC, ST, Amiga, Others*		4
3	**Silkworm** VIRGIN *Spec, C64, CPC, ST, Amiga*		2
4	**Emlyn Hughes** AUDIOGENIC *Spectrum, C64, CPC*		6
5	**Kenny Dalglish** COGNITO *Spectrum, C64, CPC, ST, Amiga*		11
6	**Kick Off** ANCO *C64, ST, Amiga, Others*		RE
7	**Dragon Ninja** OCEAN *Spectrum, C64, CPC, ST, Amiga*		4
8	**Run the Gauntlet** OCEAN *Spectrum, C64, CPC, ST, Amiga*		5
9	**Crazy Cars II** TITUS *Spectrum, CPC, ST, Amiga, Others*		12
10	**Microprose Soccer** MICROPROSE *Spectrum, C64, CPC, ST, Amiga*		7
11	**Operation Wolf** OCEAN *Spectrum, C64, CPC, ST, Amiga*		8
12	**Populous** ELECTRONIC ARTS *ST, Amiga*		15
13	**Renegade 3** IMAGINE *Spectrum, C64, CPC*		17
14	**In Crowd** OCEAN *Spectrum, C64, CPC*		16
15	**Running Man** GRAND SLAM *Spectrum, C64, CPC, ST, Amiga*		12
16	**Middle Earth** MELBOURNE HOUSE *Spectrum, C64, CPC, ST, Amiga, Others*		14
17	**Arcade Muscle** US GOLD *Spectrum, C64, CPC*		10
18	**Double Dragon** MELBOURNE HOUSE *Spec, C64, CPC, ST, Amiga, Others*		20
19	**WEC Le Mans** IMAGINE *Spectrum, C64, CPC, ST, Amiga*		18
20	**Football Manager 2** ADDICTIVE *Spectrum, C64, CPC, ST, Amiga, Others*		9

TOP TEN *Budget* GAMES

1	**Enduro Racer** HIT SQUAD *Spec, C64, CPC, ST, Others*	2
2	**Postman Pat** ALTERNATIVE *Spectrum, C64, CPC*	1
3	**Daley Thompson** HIT SQUAD *Spec, C64, CPC, Others*	3
4	**Rambo** HIT SQUAD *Spectrum, C64, CPC*	RE
5	**Road Runner** KIXX *Spectrum, C64, CPC, ST*	RE
6	**Army Moves** ALTERNATIVE *Spectrum, C64, CPC, ST, Amiga, Others*	RE
7	**MiG 29** CODE MASTERS *Spectrum, C64, CPC*	5
8	**1942** ENCORE *Spectrum, C64, CPC, Others*	6
9	**Arcade Flight Sim** CODE MASTERS *Spectrum, C64, CPC*	NE
10	**Gauntlet 2** KIXX *Spectrum, C64, CPC, ST, Amiga*	7

RE re-entry • NE new entry • Last week's positions
Compiled by Gallup

The charts shown are based on the Open Market, that is, retailers who stock a broad range of products. All charts shown are copyright of Gallup.

GOV'T'S 'BIG BROTHER' COMPUTERS SLAMMED

Worries about 'Big Brother' computers storing too much information about members of the public are growing.

In his annual report the Data Protection Registrar Eric Howe last week told Parliament that complaints from the public concerning information held on computers are increasing. And Forth is taking enforcement measures against data users.

Under the Data Protection Act of 1984 personal details about individuals which are kept on computers have to be accessible to those people. Also, Government and commercial agencies are restricted in what information they can hold.

New areas which are causing concern include the massive Poll Tax databases, increasingly complex credit assessment computers and the forthcoming computerisation of soccer fans through the Football Spectators Bill.

Howe said the public are becoming increasingly aware of the implications of the Data Protection Act. There were complaints 1112 complaints for the year ending May 31st compared with 836 the year before.

Enforcement notices have been served on the likes of Chartsearch, Halifax Building Society and the Church of Scientology College of Religious Education following complaints.

Poll Tax forms are breaching the computer privacy laws in some areas of the country where poll tax officers are asking people to fill in details concerning personal relationships with other people in their homes.

This type of information cannot be held on computers and in many areas local councils had to withdraw and rejig their Poll Tax question forms.

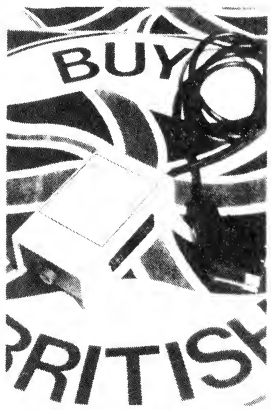
• Data day business: Concern in Parliament over Data Protection Act

SHOOT FROM THE LIP

● Feelings between Atari and Nintendo are clearly not what they could be. When asked what his plans are for the next five years Atari boss Sam Tramiel was single minded. *"To kill Nintendo,"* he declared.

● *"It looked as if it had been re-cycled from a 1950's bakelite wireless box - only someone had forgotten to re-cycle it."* Independent dealer Dale Bradford's considered opinion of - the PC Engine.

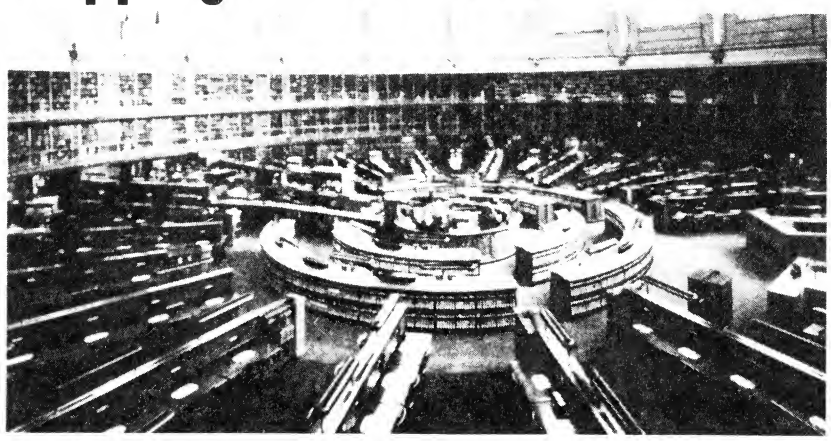
Taking a lead



Bits and bobs firm Trilogic reckons it's had so many requests for a monitor sharer that it's had to manufacture one.

Many business users want to be able to share one monitor between two computers. Trilogic has put together a series of leads and connectors for various formats costing between £15 and £18. More on 0274 691115.

Mapping out the future



• The British Library Reading Room in Wimbledon fortnight. How long before those desks are replaced by terminals?

The British Library – which since 1662 has been entitled to receive a copy of everything published in Britain – is having to get up to date and take electronic information as well.

"We're beginning to miss important information stored in new electronic media," said head of the library's chief executive office, Howard Nelson.

The problem for the BL is that many publications, such as Ordnance Survey maps, are no longer published as definitive editions, but are stored on computer enabling constant updating and special one-off editions to be produced for particular customers.

The Oxford English Dictionary is another example of the trend towards electronic data storage. It too is stored on disk and constantly updated with 5.25 inch disk versions available.

Pick a Poquet

Japanese giant Fujitsu has bought a 37 per cent stake in fledgling pocket computer firm Poquet.

This will give it sufficient cash to launch its Poquet machine later this year. That handheld business micro will be pitched as a direct competitor to Atari's recent Portfolio Pocket PC.

Cyber games touch down

An outrageous new way of playing games has been shown for the first time in Texas.

Called Shared Virtual Reality it is based on the sci-fi classic Neuromancer by William Gibson. Essentially, it allows players to interact with other players in a computer generated world.

Reality Built for Two (RB2) was put together by a small firm called VPL Research. It consists of a headset which allows the user to view a 3D cyber world without any interference. A sophisticated glove is worn on the hand which acts as a kind of futuristic joystick.

• Life imitating Art: William Gibson's Neuromancer

In the demo shown at the Texpo '89 Show two participants were seen on a huge monitor walking around the computer world. In reality they were sitting side by side but in the computer world they could have been miles apart.

It's a Spectre

Reports have been filtering through of a pirate version of the *Spectre 128* Macintosh emulator which doesn't require the Mac ROMs to operate. This effectively gives the power of a Mac Plus to a ST without any need for any hardware gadgets. Obviously this will incur the wrath of Apple.

This "enhanced" version is being imported from the States where the Spectre hardware and software was originally developed. Spectre's UK distributor, HiSoft preferred not to comment on the matter.

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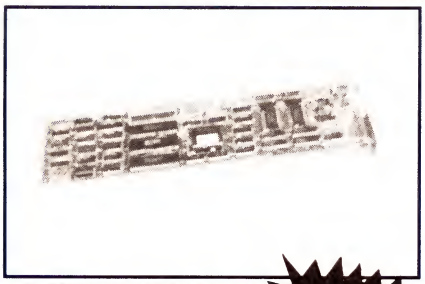

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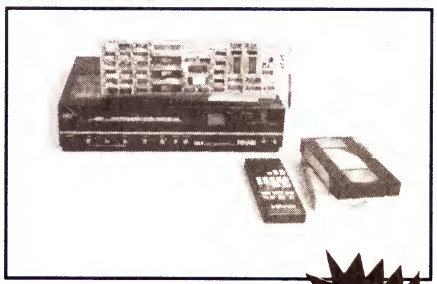

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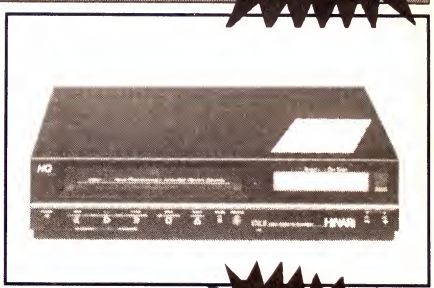

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Sans Serif
Taking as our hypothesis
$\nabla\Sigma_1\Theta\Sigma_2) \cong \infty$
the argument gives the result
$\int_v\Sigma_2\Theta\Sigma_1 = 0$
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Standard
Please find enclosed confirmation of your order for an additional 50 brass fittings with screw threads. But note...
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AБBΓr 12345 éçöîâ ♦♣♠♥ ∇ð∮∱√

Copper Plate
You are invited to Ted's housewarming party. The new house is supposed to be finished on the 27th June, ...
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AБBI ♦♣♠♥ ∇ð∮∱√

Script
We're glad to hear that you enjoyed the little "surprise" party that we organised for you on your birthday. I'm sorry that I...
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Finesse
The Residents Association
« Annual Fête »
The fête this year will be held on the 10th June at 2.30 pm
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Mini PS
Word Processor: Used to describe a computer together with special software or simply to describe the software. A word processor provides a facility to create and modify documents on a screen before ...
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12345 éçöîâ ♦♣♠♥ ∇ð∮∱√

Penman
It seems ages since I last wrote to you – and even longer since we last met. Now that I've got more time why don't we meet up in London one day soon for a ...
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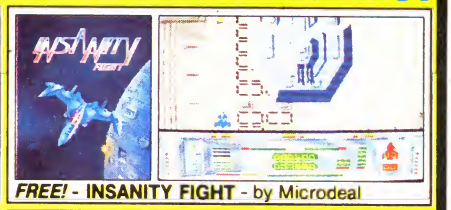

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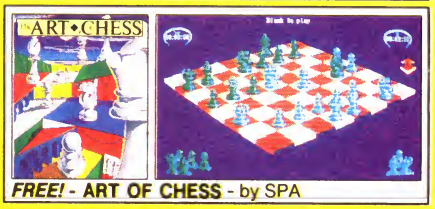

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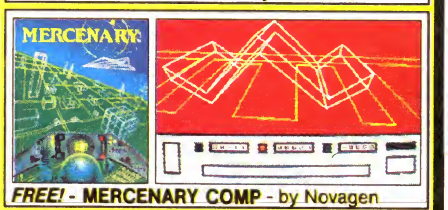

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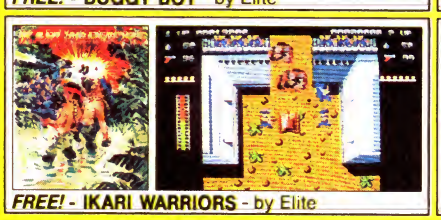

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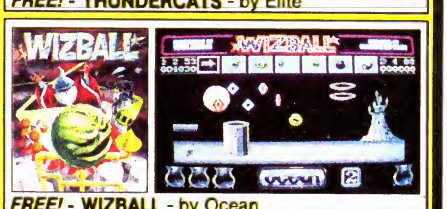

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DRIVING FOREVER

Miles Gordon Technology's new series of Lifetime drives are designed to be compatible with most makes of computer. Andy Storer jumps in the driving seat and powers up

There must be thousands of micro users out there with more than one machine, and an even greater number who one day intend to buy another – our recent questionnaire showed that 66% of readers replying were in the market to upgrade to a future PC, ST or Amiga. In this light, buying dedicated hardware doesn't make much sense; that printer or monitor could be so much junk within a couple of years. The same goes for disc drives.

But whilst it's true to say STs, Amigas and PCs have operating systems capable of recognising a multitude of external disc drives, to date there hasn't been a drive released which offers you an all-in package with the security of technical support. Step in MGT and its Lifetime drive.

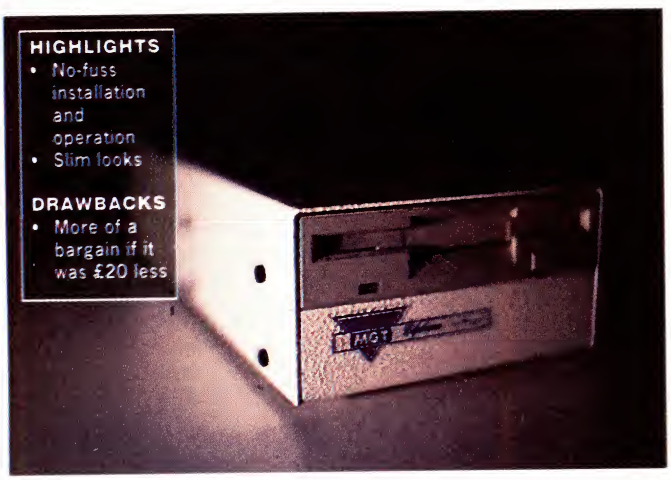
Actually, there are three variations on the 3.5" version with internal power supply we took a look at – namely powerless versions of the same and 5.25" versions of both.

Some computers, notably the Amiga, supply power to the drives, but a powered Lifetime drive can sense this in any case and continue regardless.

The Lifetime takes 80-track, double-sided, double density disks offering storage capacity of 1 Mb. A variety of leads are supplied at extra price to connect your machine to it – those for the ST, PC and Amiga costing £18.50, those for the QL, BBC and Spectrum £10.95. Installing the drive is very straightforward and well-documented – requiring a line of 6 red micro-switches at the back of the drive to be set according to the system you're interfacing. These red switches remove the need for software-based control or specially-ordered leads for most machines.

Setting it up with the ST, Amiga or Beeb is simplicity itself – just plug in and go – whilst the PC requires a a single line MS DOS command to install it. When it comes to the QL you'll need a separate disk interface, as you will if you have any Spectrum other than a +3. MGT can supply you information on both interfaces.

Performance-wise there's not much to be said about the Lifetime – it operates as much as you would expect – relatively quietly and without fuss. It would appear to be a standard 3.5" NEC drive contained in its rather long casing. But then to any disk drive owner, a drive is a drive – like a toaster's a toaster.



EXPRESS VERDICT

★★★★

By paying between £140 and £150 you get a drive which'll serve you across a range of machines. Whilst similar 1 meg drives can be had for as little as £80, and accompanying leads for roughly the same price as supplied by MGT, it would appear you'll be paying an extra £40 to £50 for the peace of mind of an off-the-shelf system. You pays yer money....●

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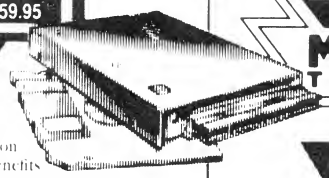

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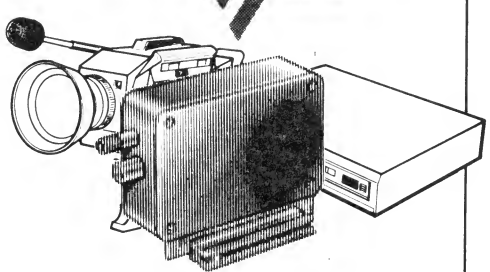

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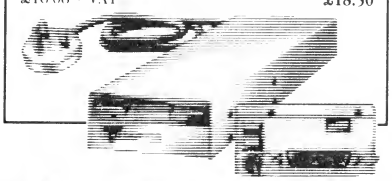

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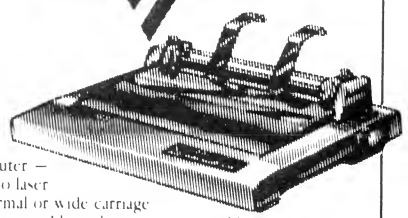

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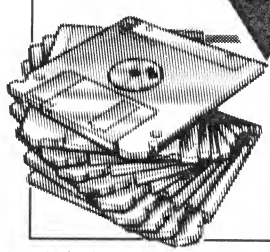

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EXPRESS MAIL

Dear Reader

More pages packed with another selection from our postbag and Rob Ainsley's replies. Have you got something to say? Make your voice heard in computing's liveliest letters page! Send your contributions to: Express Mail, 4 Queen Street, Bath, Avon BA1 1EJ

PS. Sorry, we just don't have the time to give personal replies, whether you include an SAE or not. We're too busy putting Express together!

TOP TEN TIME

More unfavoured things about computers:
1 Modular programmers who think that COBOL is modular.
2 European-5-a-side clones such as *Microprose Soccer, Kick Off* and *Speedball.*
3 Owners of the Armitage Shanks with a keyboard, the Amstrad PC1640.
4 People who say things like 'How you handle it is how you portray it'.
5 Morons who knock the ST and Amiga because their PC is crap. After all, you can't do *Trip-A-Tron* on a Hercules Monochrome screen, can you?
6 People who send messages by fax.
7 Hypocrites.
8 Any system that doesn't have at least 1 Mb of memory.
9 Pillocks who buy games like *SAS Ninja Commando BMX Warrior Powerboat Simulator* instead of good games like *Tetris* or *Xenon.*
10 MS-DOS's *Edlin* text editor.
The Anonymous people from an Anonymous computer shop (who sent this by fax)

● ***Any more offers, anyone?***

• Doesn't look like a PC1640 to me. Doesn't have a keyboard for one thing.

STEADY NOW

I was going to purchase an Atari ST until I read your news about the STE and what I would like to know is will games such as *Dragon Ninja, Operation Wolf* etc. be reproduced with better graphics and sound for this new machine?
Joseph Trolan, Draperstown, N Ireland

● ***No, I'm afraid. I doubt that old games would be converted for any new machines that Atari might launch, though new ones would of course come out with graphics and sound appropriate to the state-of-the-art at the time.***

The STE is still very much at the drawing board and prototype stage and it's not certain it will ever appear, so the ST is still a good buy!

GREEN PIECE

We all know about the environmental problems facing us all. It must be said that computing is a more environmentally safe hobby than many others. But we can all do something, be it the use of unleaded petrol or just turning off electricity when not needed. But I am writing as there is something the magazine publishers and other manufacturers can do. They could help with the use of recycled and unbleached paper. It would help save the rain forests and our health from the dioxins in bleached paper.

Write to the publishers, show your feelings and it might change. If it does change it must be said that magazine readers would be prepared to pay a reasonable increase. So the publishers and other manufacturers should be aware of doing the same as the water industry – we are not stupid. I hope Express will express its green credentials in printing this letter.

(I've sent a copy of this letter to other magazines, by the way.)
Derek Wray, Shildon, Co Durham

● ***Express is on ecologically bleached paper, and the wood pulp comes not from the Amazon region but from Scandinavia where they replant faster than they fell. Going on recycled paper would, I'm afraid, be commercial suicide; it would push the price of Express up (recycled is 30% more expensive than fresh) and the quality is too poor even for black and white pictures. Gas bills, envelopes, pay slips, memos, paper bags etc. – I think that's a more suitable application for recycled. Thing is, if Express goes bust, I'll be out of a job, then I won't be able to afford to buy ecological washing up liquid, recycled notepaper, subscriptions to the various environmental organisations, etc. etc...***

WAITING FOR COMMODORE

I have been waiting since the middle of March for my Amiga to be repaired. The delay seems to be a result of an apparent shortage of Amiga chips, and the main Commodore supplier is still awaiting delivery. Commodore seem to be quite happy to manufacture and retail new computers, but they seem to be a bit slow in manufacturing and retailing spare parts!

When I can afford to upgrade/replace my existing machine, in the next two or three months, I shall be considering as a high priority manufacturers that can offer a prompt "after sales support", and from what I have so far experienced, and still continue to experience, Commodore won't even get a look in!
Alan G Smith, Walsall, West Midlands

● ***There are no specific problems as far as we know with the supply of spare parts; it seems from the letters we get that you have wait a few months for either Atari or Commodore to repair machines.***

STATIONERY HOLD-UP?

Do you know anything of the status of Computer Stationery (UK) who advertised in *Express* 26? I ordered 4 printer ribbons from them on May 25 but despite a reminder have had no response. I have also tried telephoning and find it is a general switchboard for several businesses. There is no reply from the Computer Stationery extension and messages left with the receptionist have not been responded to. What do you suggest next?
M G Miller, Sheffield

● ***Try contacting your local Trading Standards office (get their number from directory enquiries). We no longer take adverts from this company. Speaking generally, a company which fails to deliver to its customers is very bad news for us too as it tends not to pay for its adverts!***

NORMAL DISTRIBUTION?

Although I feel *Express* is a very good magazine, I feel that the price of 58p is not justifiable if I have to wait until the Monday after publication to be able to collect my magazine. I accept that you may have a few problems in distribution, but I feel that visiting until Saturday is very bad when the magazine is published every week on a Thursday. I also buy ST Format and have only had to wait until the Friday for that to arrive.

Many newsagents in the area have told me that all Future publications arrive late most of the time, but *Express* is particularly bad.
Vincent Marsters, Evesham, Worcs

● ***Problems with distribution (which we***

Snippets

SAME DIFFERENCE

...The ST and Amiga are both excellent machines and very similar (70% the same apparently) therefore it is pointless to criticise the other as it is 70% the same – you are insulting your own machine...
Rob Chapman, Warks

● ***Both are 68000 based, and programs can be ported with only the graphics and sound changed. But what a difference that 30% makes.***

DO YOU UNDERSTAND?

The BBC recently reported the funeral of the Ayatollah. Well, it's his own fault for not upgrading to a BBC A3000.

No I don't suppose it is funny, but it's hilarious in comparison to Ken Mosley...
M Merryfield, Southport, Lancs

D'YE KEN?

...Support Ken Mosley. He's got the right attitude. Make him the editor of *Express*...
Laurence Sheed, Hampstead

LIP SERVICE

A couple of quotes I feel should have been included in "Shoot from the Lip".
"Hackers feel very secure in their bedroom on their machine" - John Austin.
"We want to meet Emma Nicholson and find out what she's up to. I'm not sure how far she wants to go" - Noel Bradford.
Rafael Jay, Bath, Avon

● ***Well, if you use a double entendre it can only mean one thing.***

• Amiga (left) and ST (right): Are they by any chance related, asks Rob Chapman

don't handle) are a headache for us too. It's a bit annoying to spend your life producing a magazine which doesn't get onto the shelves until it's too late. If you have any problems getting Express *in your newsagents, don't blame us, but do tell us – hopefully we can do something about it.*

Why not subscribe? No more scouring the newsagents of Evesham: you'll get your weekly Express delivered to your door, and save a few quid too. See page 35 of this issue.

PIRATE'S TALE

On the subject of software piracy here's something amusing I noticed whilst reading my back issues of The Micro User (for the BBC, may its chips never blow).

March 1984: "£5000 bait to beat pirates". A&F Software offer £5000 to anyone coming up with uncrackable protections for their games.

June 1984: "Anti-pirate breakthrough". "We now have a system that will make it virtually impossible for school children and computer clubs to make audio copies or computer dumped copies of our software. Not only that, but it will have serious implications for the professional pirates." - Mike Fitzgerald, managing director. The system cost A&F £20,000.

November 1984: "Pirates force A&F out of BBC Market". Piracy of its products on a massive scale forces A&F to abandon in-house development of games for the BBC Micro.

Also, has Mel Croucher ever published a complete collection of his "Computer Chaos" tales? If he hasn't, he ought to.
Rafael Jay, Bath, Avon

● ***I don't believe Mel has published any such collection – any publishers out there interested? (Mel was unavailable for comment at the time of writing this, as he's up to his eyes writing the manual for the MGT SAM Coupé).***

The great PD ripoff?

MYSTERY PRIZE WINNER

Having just read your article on Public Domain (Express 35) I would like to make a few points.

First I would like to make it clear that I myself run a Public Domain library for the Atari ST called 'Paradise Computers' so please excuse my biased opinion. Second I would like to thank you for an interesting and informative article, an ideal way to introduce newcomers to the world of cheap software and a good read for those already in 'the know'.

Not all clubs charge as much as three pounds for a piece of software. If you supply the disk they are usually £1.50 each, but may I point out to unknowing users that Public Domain clubs are not actually supposed to make a profit. That is why we only charge 75p if the disk is supplied, and £1.50 if not. You may say that 75p is still profit, but out of that 75p we have to pay for a label, 19p stamp, 35p for a jiffy bag and also printer ribbon costs, so we never actually have anything left over.

Paradise Computers also do not have a membership fee – anybody can buy at any time, and neither do we charge for our catalogue as one club tried to do.
Neil Slater, Brighton, East Sussex

● ***I'm sure we'll have lots of letters from the larger places justifying their charges – particularly on account of advertising – but the point you raise is a significant one. I wonder how many PD places actually do rake off a profit?***

Anyway, Neil, we're sending you a piece of commercial software for your ST as sender of this week's prize letter.

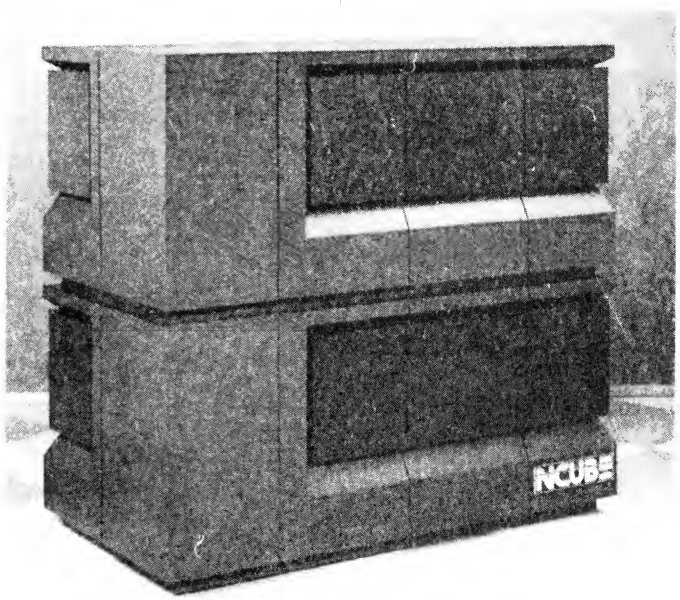
• PD software is cheap because no-one makes a profit from it. Or do they?

NCUBISM

I read with interest the article on the NCube supercomputer and have a few questions:

• Is there a memory upgrade planned for the Amiga?
• If not, could I do the upgrade myself and if so would I need:
a) a soldering iron
b) a workshop manual
• If not suitable for the DIY man could anybody with £38,000,000 lend me half?
Philip Riley, Billingham, Cleveland

● ***Why not buy an NCube? We plan to include in our unique Express vouchers scheme a voucher for £1,000,000. This will of course only apply to purchases by mail order over £20 million.***



• The £30 million NCube, the most powerful computer in the world, 15,000 times faster than an Archie. Sorry, no chance of an NCube column.

DEFENCE OF THE AMIGA

How dare Paul Quinn (*Express* 35) call the Amiga a "Sega with a keyboard, the big toy" and its owners "self-righteous owners of the most useless article since the Sinclair C5"! Just who the hell does he think he is?

Here are a few facts for you to chew on:
i) The Sega has 64 colours, the Amiga 4,096. Surely any moron can work out this is just over a 98% increase in colour!
ii) The Sega has 3 sound channels, the Amiga 4.
iii)The Amiga has custom-designed sound and graphics chips plus a blitter to help speed things up. The Sega doesn't.
iv) Ever heard of desktop video on the Sega? No, neither have I.
v) The Amiga has a larger software base than the Sega.

I could carry on but I think I've made my point.

I have no wish to knock the Sega, in fact I do own one and think it's a great games machine, but that's all it is - a games machine. You can't program it, nor draw, nor make music, nor use it in a business environment.
Craig Thornton, Lincoln, Lincs

● ***Well, at least we seem to have moved away from arguing about whether my-computer's-better-than-your-computer.***

SATISFACTION GUARANTEED

My son bought an Atari ST from the Hayes branch of Computer Express for Christmas, and now the disk drive has proved faulty. I was informed by them that as the guarantee was only for 90 days they did not want to know.

It seems this is a meagre deal for a

ANOTHER TOP TEN

My worst things about computing are:
1 People like Paul Quinn (Express 35) who think they sound so smart knocking beginners languages like BASIC (so it's not brilliant, but it is for beginners).
2 People who own a PC and who seemingly enjoy slagging off superior machines (ie the Amiga - and no I don't own an Amiga).
3 People in the Government who decide that computers aren't important any more in this "hi-tech age of computers".
4 People who use only spreadsheets or word processors and then slag off games, even though they've never played them.
5 People who hate people who say "It's all done by computers nowadays" and probably say it themselves.
6 Software houses which claim they have released a game but haven't really.
7 People who don't work and collect dole money but can still afford every new game the day it comes out.
8 Magazines which decide for themselves which one of them is the best which I wouldn't read if someone paid me to.
9 People who go in for every competition they can, and win them all.
10 Arcade conversions which get so much hype and much advertising space, but which are complete crap (with the exceptions of Operation Wolf and Bubble Bobble).
Andrew McMinn, Colchester, Essex

● ***Thanks for your choices. Keep 'em coming in, everyone...***

comparatively sophisticated machine intended mainly for children. It suggests that as guarantees for machines for adults are for a year, advantage is being taken of the naivety of children (or their non-computerate parents).

As they are large advertisers in your magazine I feel a word from you might encourage them to be a little more sympathetic in dealings with their younger customers.

Brian Everitt, Alton, Hants

● ***The 90-day business is apparently the shop guarantee – you still of course have the one-year Atari guarantee, which involves you having to send the machne back to them of course.***

However, as a gesture of goodwill, Computer Express (which is nothing to do with us, despite the similar-sounding name!) has offered to repair your ST free of charge – just take it back to the Hayes branch.

AND ANOTHER THING...

The comparison you made between locking your front door and bike, guarding your Access card etc, and software protection, is rather pointless. Do people sell locks which will open your front door every now and again, but not always? Do Access issue 10-digit PINs which no-one can ever remember? The answer of course is no. But look at ST owners, who buy perfectly working machines and yet protection will lead to some software not running. Remember the rumours about C64 drives being damaged by protection? The early Spectrum lens-locked software, which many people couldn't get to work successfully? Hard disk owners (and sales) don't benefit much either from protected software. I myself have a number of titles which grind the drive to make some pretty horrendous noises, which I can't imagine enhancing a drive's lifespan. *Addictaball* on the ST is a good example.

Many people use the arguments, "Well if we started buying software (as opposed to copying it), it'll just make the software houses better off, and do little to improve the quality of the software", and of course the now infamous, "It's too expensive to afford". Imagine a situation where there was no piracy, and people were purchasing games etc. This would in effect give the user more control over the market. This might sound a little strange to most people out there, but think about it. Since people would be voting with their pockets, all they would have to do is simply start purchasing less software. This in effect will deprive software houses of what might have been seen as their "rip off" profits. The only way the software houses could then cure the problem is to simply improve their service, support, prices, quality etc. But in the real world piracy is rampant, and the software houses do not have control over this, i.e. improving the above mentioned does not guarantee the software industry greater returns.

On a lighter note, my letter in *Express* 33 seems to have gained three typos! First paragraph should have read "...is not write-protected." Last paragraph should read, "...survive without any protection and sell to."

Ahmad Alam, Manchester

● ***Firstly, my front door lock is pretty reliable, but I do have a bicycle padlock that keeps getting tangled in the spokes. Secondly, we've heard the rumours about protection ruining drives too, and that the Earth is flat, and that Adolf Hitler is alive and well and living in Basingstoke. Thirdly, we've never heard of anyone losing money when people stop ripping them off.***

Sorry about the typos. Perhaps we couldn't understand what you were on about then, either.

MUCH ADO ABOUT EVERYTHING

Now at a green screen near you – *Mini Office Professional Plus* for the PCW, attempt number 3: A Comedy of Errors.

• **Cry!** As the spelling checker still doesn't work within a document...

• **Scream!** As the spell check module advises you that your LocoScript document isn't a LocoScript document...

• **Laugh!** As you read the message warning you that the crossword cracker and anagram solver can take a lot of computer time...

• **And introducing** a rising scarlet: the randomly corruptible main menu.

Mini Office Professional Plus is so good it'll have you pulling your hair out!

If on the other hand your tastes are of a more sedate nature, may we suggest the communications module without a Centronics interface fitted. For endless hours of peace and solitude simply select it from the main menu and choose the phone book option and try to dial a number. This will cause the machine to freeze leaving you happily isolated until you switch off.

Another helpful feature from *Mini Office Professional Plus*.

A Database Publications production.

Brian Smith, Plymouth, Devon

● ***Comedy of Errors? Sounds more like a tragedy to me. Enter Hamlet left.***

To buy, or not to buy, that is the question:–
Whether 'tis nobler in the mind, to suffer
The bugs and glitches of outrageous coding;
Or to take arms against a sea of errors,
And, by opposing, end them?– To hang,– to crash,–
No more;–and, by a crash, to say we end
The lockups, and the thousand endless loops
That code is heir to,–'tis an execution
Devoutly to be wish'd. To hang;–to crash;–
To crash! perchance reboot;– ay, there's the rub;
For in corruption what new code may come,

(That's enough Shakespeare –Ed.)

It's now or never

NEW! for Atari ST
MASS DUPLICATOR

This one is **POWERFUL**, really powerful. Includes **software and hardware**. A special cable fits between the ST and second drive, load the software and watch it go. Copy the most difficult software in **less than 40 seconds**, YES virtually any software in less than 40 seconds. **AMAZING!!**

Buy now, you won't get another chance

We Accept Express Vouchers

Only £29.95

Don't let the opportunity to own this powerful product pass you by, we know you will be amazed and delighted, if not return it for full refund, we guarantee satisfaction.

NOTE...This product must be used with a second drive, if you don't have one we can supply you the Mass Duplicator with a drive for the special price of only £105.00

On 1st August 1989 a new law comes into force that will make the advertising and sale of backup software and devices illegal. If you want to buy any of the products in this advert you must order quickly, next month is too late.

BACKUP PRODUCTS

AtariST...

Disector ST, disk based copy and utility package. Includes 80 parameters that de-protect individual software titles, OK for single drives..... **£28.95**

Amiga...

XCopy, the best disk copier for the Amiga,copies the vast majority of protected software..... **£27.95**

PC & compatibles...

Copy II PC, the leading backup program for the PC, now in V5.0 also includes Noguard & Nokey for hard disk users, very popular **£24.95**

Copy II Deluxe Option Board, the most effective copying product for the PC. A short card that once fitted will allow you to copy virtuall any software. Even has the facility to transfer MAC data back and forth **£84.95**

Commodore 64...

Freeze Machine, the popular backup cartidge that allows you to load a program in as normal the press the button to freeze the memory, Now you can save the program to tape or disk. Simple to use and very effective. We are offering a very special price on this product until the end of the month, only **£14.95**

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ISSUE ONE

ST FORMAT is the **irresistible** new magazine for every ST owner. The first **stunning** issue has 116 high-quality pages crammed full with **authoritative** coverage of games, graphics, music, PD, serious software, Atari's future plans, BASIC tutorial, competitions ***PLUS*** there's a program-packed cover disk with **800K** of demos, utilities and **GFA BASIC** - as well as the remarkable **playable demo** of Mirrorsoft's follow-up to Dungeon Master, Bloodwych and **so much more.**

IT'S AN ST OWNER'S DREAM COME TRUE...

ST FORMAT IS PUBLISHED BY FUTURE PUBLISHING, THE FIRM BEHIND NEW COMPUTER EXPRESS, ST AMIGA FORMAT (AS WAS), PC PLUS, AMSTRAD ACTION AND 8000 PLUS. AMIGA OWNERS LOOK OUT FOR AMIGA FORMAT: **IT'S ON SALE NOW...**

FROM A TO B AI

Between them, two new PC products provide what could be the most genuinely useful application after a wordprocessor. Andy Storer travels the country without even leaving his desk.

Autoroute Plus and *Open Door* unravel the complexities of travel; the former providing a complete electronic map of the UK's road network with route, time and cost information of journeys, the latter a range of features and services offered by the country's main hotels and the means of visiting them by plane and train.

For the general user, *Autoroute Plus* is perhaps the more practical of the two, since its worth rests on its ability to plan a route for any purpose whatsoever, whereas *Open Door* is designed more for the business traveller and conference organiser. But used in conjunction, the two packages provide an indispensable and comprehensive utility for anyone who's mobile.

AUTOROUTE PLUS ● NEXT BASE (0784 460077) ● PC £299+VAT ● ALSO AVAILABLE ON ST (Reviewed Express issue 20)

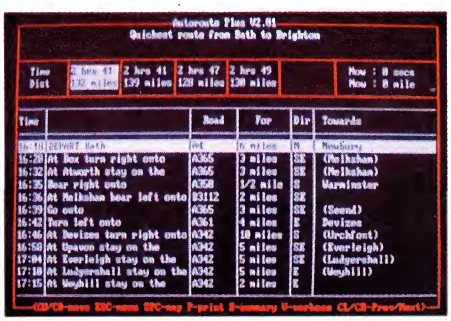
Autoroute is a journey planner, based on 67,000 miles of road network and 33,000 place names, which allows you to plan the best route between as many as 25 places in the UK. Coming on eight disks, the program is best run off a hard disk to minimise disk swaps, but once loaded the package is simplicity itself to navigate. A series of highlighted menu options across the top of the screen can be clicked to reveal full screen requests for personal preferences and requirements.

Getting into gear

There are five sets of input required before proceeding to the actual calculation of the journey. First on the agenda is the Journey options screen in which you enter details of your intended route. Besides stating your start and destination points and the intended departure and arrival times, you can include as many as twenty-five places you may wish to visit on the way and the time you want to stop off in them. Likewise, you can also specify upto four places you'd like to avoid.

Once entered, you move onto specifying your like or dislike of motorways, A and B-roads, and whether you like changing roads very much. There's also a very useful slow road factor here which defaults to 75% but can be altered if you know, for instance, your intended journey will take you through rush hour in a major conurbation. You're also able to select a choice of routes at this point – the quickest, cheapest or most economical – or a selection of all three.

• Autoroute provides a map with all motorways, A and B roads clearly marked, as well as likely hostelries...



• Once the program has calculated a route, you're presented with a table detailing the roads, and relative route timings

There's a choice of vehicle speeds built into the Speed options of *Autoroute*. Five vehicle types are included, and it's possible to alter your preferred speed of driving on a range of roads.

Finally, you're able to enter charging rates for the journey. Here you may include petrol costs, hire charges and expenses – even the differential rates for specific ranges of miles a travelling salesman may operate under.

The Calculate option puts you straight into the main work of the program. *Autoroute* uses two search algorithms – one begins at the starting point and moves out equally in all directions on all available roads until the destination is reached, the other scans all roads and combination of roads looking for start and destination places on them. Both methods eliminate any roads which don't meet these conditions. Either way, calculations are remarkably fast – on a 286 12MHz PC, a journey from Land's End to John O'Groats using only B-roads, a 1,300 mile journey taking 59 hours, took just under two minutes to calculate. More sensibly, most calculations take well under a minute.

Screen mapping

Autoroute will supply several calculations for each journey stipulated; the number depending on its length. For once the quickest, shortest and cheapest routes have been displayed, *Autoroute* begins to look for duplicate routes. At any point, you may hit any key to stop further calculations,

A romantic weekend?

Summer's here, the nights are long and a young man's thoughts turn to... his hard disk. You're after a weekend in Brighton with your partner, driving down from Bath late Friday afternoon and returning Sunday evening. Being a journalist you can't afford The Grand, even though you've heard its Croissant and Coffee breakfast for £15 is very good, and reckon £75 for a couple of nights should do the trick.

Autoroute Plus reveals a scenic cross-country route of 132 miles that'll take you 2 hours 40 minutes and cost you £16 in petrol there and back. You print out a step by step guide to the route and load up *Open Door*. You want a hotel near the sea; you enter your budget details. Yes, you'd like a room with a shower... room service and a mini-bar might not go amiss either – but you certainly won't have time for TV. *Open Door* comes up with 3 possibilites, of which The West Beach hotel sounds the best bet. You grab the phone and reserve your room. Everything But The Girl... and the £548+VAT you need to buy the software!

AND BACK AGAIN

but it's often best to hang on for a while, since some of the intermediate routes will display times and road combinations that are better than the initial selection.

You may then select to print the route to screen or printer, where directions, time and durations are displayed. But the most interesting means of representing the data is the map, which can be zoomed at the touch of a key to a scale of 1 mile per screen width. You can also click a cursor to any point to name a road or place. Motorways are shown in blue, other routes in red, towns and villages in yellow and natural features in green.

From the map screen you can access the gazetteers and overlays. Gazetteers are databases of detail like villages and natural features – once installed and invoked, you simply hit F3 to GoTo the place you wish to look at and then zoom to the particular locality for a close-up of its postcode. But you may also add your own gazetteer data to produce your own maps. Each user gazetteer may contain upto 1,000 place names. The F3 option is a very useful feature, not included in the ST version, which allows you to flip to any part of the country in a second or so to view the local environs of a place. It particularly comes into its own when used with the overlays feature. Here, overlays of postcodes, railways and stations can be added to the map or removed if you want faster screen updates.

Finally, Summary files can be created to transfer information to spreadsheet and database packages. The test file produced can be imported so as to manipulate totals, averages and other statistics.

Express verdict ★★★★★

If you can afford it and do a lot of travelling in your job, Autoroute Plus will prove indispensable and probably eventually pay for itself. Its Go To feature also makes it useful for just perusing maps of different areas of the country at different scales. In conclusion, a unique package that can only get better.

OPEN DOOR ● LUCIDUS (060872 8134) ● PC £245 +VAT

Open Door provides a neat solution to a problem left open by *Autoroute* – namely, where do you stay once you've arrived at a destination? But the package is much more than a simple hotel directory, perhaps being best described as a comprehensive accommodation organiser.

Since *Open Door* comes on 12 disks which need to be installed on a hard disk, you won't be surprised to learn there's more to the package than mere hotel listings. There's information on up to 30 different factors that you may need to take into account when choosing from its selection of 1,800 hotels. And that's before you invoke its UK air timetable, train station information and expenses tracking features.

Room service

The package is structured around providing you with a travel pack – a stand-alone file that contains all the details of your eventual selection. You need to specify your particular requirements at an early stage – these can then be used for subsequent trips to other towns and cities.

The list of requirements supplied is very comprehensive and clearly arranged on-screen. First off, there's the essentials to get out of the way – where you're going, how near to the centre you want to be, your date of travel and your budget. Secondly, you give the objective of your visit – business, entertaining, conference or recreation/ holiday. Then you're guided into specifying a range of needs – do you want a room with a bath/shower? A phone? A radio or TV?

In less than 20 seconds, *Open Door* will present you with a list of hotels that represent the closest match to your stated requirements. You may re-sort the list or simply select and peruse the details of individual hotels. Here you're able to glean further information - the style of the hotel, dining facilities, local amenities and recreations. All selected data can be annotated and then added to your travel pack and printed out. The reservation request can even be printed as a pro forma booking form.

• First choose the facilities the room of your heart's desire should have...

• ...then sit back and the program will provide an establishment which meets your requirements

Trains and boats and planes

Although *Open Door* will supply you with a single road mileage calculation between two points and the phone numbers of train stations, the most detailed data on how to actually get from A to B is left to the air timetables. Train timetables were to be included but the cost of regular updates would have been prohibitive. Consequently, you're left with a guide to UK internal flights that is easily accessed from the main menu. Information stored in your travel pack will notify you of the nearest airport to your destination. UK ferries are also included, as are international dialling codes. You might assume there's more to *Open Door* planned for the future, and indeed this is the case – European and US supplements are in the pipeline.

Express verdict ★★★★

Open Door is a package best suited to the business traveller and conference organiser, since its hotel database is rather upmarket. But there are bargains to be found – how about a 5 star hotel in Mayfair for as little as £20 per night?

Otherwise, *Open Door* is easy to use and takes the pain out of planning a trip.●

Future features

• *Autoroute:* Next base is planning to introduce a new overlay soon representing local authority and county boundaries. This is being included after customer demands. So, the company is open to suggestions – it's had requests for overlays to include hotels, pubs and petrol stations chains which are all under consideration. As is the facility to annotate the maps yourselves to include your own information.

• *Open Door:* The price of £245+VAT includes bi-annual updates and thence a cost of £45 a year will bring you updates indefinitely. Over three years the package will cost you 44p per day, says Lucidus. More hotels will be added – August sees the addition of the Hilton, De Vere and Mount Charlotte chains.

MICRO DESIGN ● CREATIVE TECHNOLOGY ● £59.95 OR £99.95 WITH KEMPSTON MOUSE. (0889) 567-160 ● PCW 8000S

DESIGN AWARD

Could this be the best desktop publishing program yet for the PCW? Tim Smith looks at Micro Design

Perhaps the biggest use of the PCW after word processing is desktop publishing – parish magazines, newsletters, circulars, club bulletins and so on. With three good programs on the market, including the highly-rated *Stop Press*, it seemed there couldn't be room for any more. But Creative Technology has done the impossible.

FEATURES There's speed like you wouldn't believe possible from the PCW. This is one of the three outstanding features of *Micro Design* which makes it a product to be taken seriously as well as with great pleasure. The other two are the impressive text editing capability and the refreshingly easy Undo facility which lurk within the multi-layered software.

To get the best from the system you will need a mouse. *Micro Design* recognises both the Kempston and AMX versions. Once you have installed your personal preferences as to mouse type, cursor speed and important facts, you can find yourself racing around the various levels of the program like Lauda at Monza.

Micro Design comes armed with 66 user-definable icons of 13 by 16 pixels square and 9 other which come in at 24 pixels square. The ones you get are handy enough, electrical and musical symbols, even weird little face symbols (including Adolf Smileyface). But if they don't please you, editing them is no great problem either. The same can be said for healthy selection of fonts, each of which consists of a 96-piece character set. Thankfully, disc space is not wasted with 'zany' space age fonts.

The maximum page size is set at 256K, which obviously means 8256s must be upgraded, and there are three page formats – A4 Portrait, Landscape and Strip, which is about a quarter of A4 in depth. *Micro Design* will quite happily take digitised pictures and cutouts from other systems so any libararies you might have built up will port over.

As for the text editing, yes! It recognises the old [+]Bolds (and other such commands) beloved of LocoScripters. It will also allow you to type in all the text you need before placing in the page itself. Text can also be ported in from *LocoScript* (automatically) and *Protext* (tell the Options sections first). If there is one thing which will win *Micro Design*'s acolytes it will be this. Of course if you don't like what you've done you can cancel it with a single mouse click or keypress.

On the downside, it can get a bit like playing dungeons and dragons in a dimly lit labyrinth. Unlike *Stop Press*, which has a single box containg everything you need to know, *Micro Designs* is multi-levelled, with more menus than the Bath Tandoori. Most irritatingly a few of these levels have the same name, such as the two Designs.

More important, however, is the fact that the system has an intense dislike for large files. Actually saving a page for later use can result in a tragedy of PCW proportions. Our machine crashed twice in the course of the review. Creative Technology immediately came through with a new disc and all seems well.

HIGHLIGHTS
- Very fast – puts rivals to shame
- Text editor
- Uses LocoScript files directly
- Versatile and powerful
- Good printed quality
- Undo facility

DRAWBACKS
- Doesn't like large files
- Lots of levels – can be confusing

DOCUMENTATION The manual is comprehensive, immensely friendly and will lead you where you want to go.

VERDICT ★★★★★

Thumbs up from the lads! Basically, other desktop publishing applications have fallen down on such points as text being subsumed by pictures and sloth as the order of the day. *Micro Design* has learnt from this and will hopefully force a rethink by the makers of *The Desktop Publisher*, *Newsdesk International*, and *Stop Press*. This beats the lot. ●

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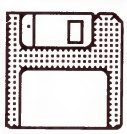

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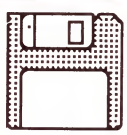

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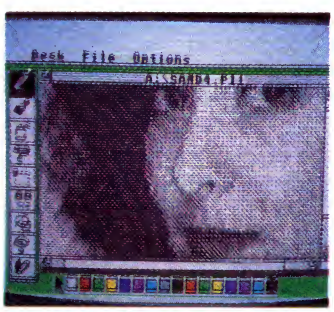
S

SAM COUPE (C): Spectrum clone from Miles Gordon Technology, the company responsible for disk drives and other peripherals for for home computers. Announced almost two years ago, the machine is yet to reach the market place. See also ***MGT***.

SAVE (T): The process of storing computer programs and data on some medium such as magnetic floppy disk, tape etc.

SCANNER (T): Device used to 'read' pictures such as photographs and diagrams, text etc, into a computer for manipulation, incorporation into desktop published documents, storing and printing. The scanner works by shining a tiny beam of light onto the surface of the document, then measuring the intensity of the reflected light. In this way, it's possible to build up a monochrome picture using black, white and grey to represent all the intensities in between.



• Scanners "read" pictures and convert them into a form which can be used by a computer

SCREEN DUMP (T): The process of reproducing the displayed contents of a computer monitor on a printer. Many machines provide an in-built (hardware) method of copying screens. PC clones have a *PrtSc* key, STs use the key combination *alt* and *help* and there are many more. For those machines lacking the hardware means to print screens, software utilities have been written which set up a series of 'hot keys' which, when pressed, send a copy of the screen to a printer.

SCULPT 3/4-D (GRA.): *The* ray tracing program for the Amiga. The application incorporates many complex features to enable the creation of superior graphics.

• Sculpt 3D: Definitive Amiga ray-tracing package

SEARCH & REPLACE (T): The process of searching for a string of text within a document, program etc, and replacing each instance with a substitute text string.

SECOND GENERATION MACHINE (C): Generic term to describe computers manufactured between 1959 and the mid 60s using discreet components such as transistors (as opposed to machines using vacuum tubes). See also ***third generation machines***.

SECTOR (T): Before a floppy disk can be used to store programs and data, it must be divided into portions which can be used by a computer. The disk is divided into a series of concentric rings known as tracks and each track is subdivided into sectors. This process of division is performed during the initialisation or 'formatting' of the disk. See also ***floppy***.

SEEK TIME (T): The amount of time taken to position the read/write head of a hard or floppy drive over the track and sector of a disk containing data to be accessed.

SEMICONDUCTOR (T): Solid material usually silicon or germanium (better than silicon but more expensive) which has conductivity properties that lie between high conductivity materials such as metal and low conductivity materials such as wood and plastic. Semiconductors can be made to permit or inhibit the flow of electrons by altering temperature and pressure. Semiconductors are used in the manufacture of integrated circuits.

SENTINEL (G): Surreal and highly addictive arcade and strategy game, originally available for the BBC micro and just out on the PC.

SEQUENTIAL ACCESS (T): Term used to describe the process of finding data on a storage medium such as magnetic tape where every piece of information has to be read until the desired data is located. See also ***random access***.

SERIAL I/O (T): Serial communication involves the transmission of data one 'bit' after another until all information has been sent. Imagine a reservoir of some liquid with a tube of limited diameter the only escape for the liquid. This outlet tube permits one drop of liquid to escape at a time until the reservoir is empty. This is the principle behind serial communications. Contrast with ***parallel interface***.

SHAREWARE (FREEBIES): Term used to describe software which can be freely copied and distributed but requires the recipients to make a fixed donation to the author of the software if they decide to make use of the program on a regular basis. See also ***public domain***.

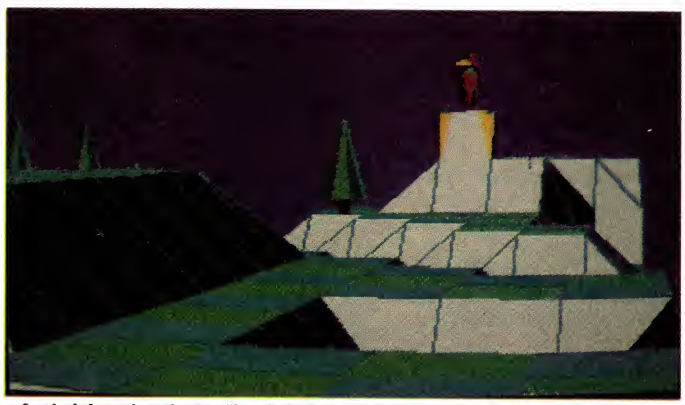
SHARP (CO.): Japanese consumer electronics company originally responsible for a range of popular calculators. The company progressed to home computers with the MZ80, featuring a built-in cassette. Sharp is currently riding high with its IQ hand-held computer/organiser.

• Sharp's IQ personal organiser

SHEET FEEDER (T): Device which, when connected to a printer, passes one sheet of paper at a time to the printer. The sheet feeder is used with daisy wheel printers, where documents to be printed usually require a higher grade of paper than that provided in fan-fold or roll form. See also ***daisy wheel printer***.

SHOOT-'EM-UP CONSTRUCTION KIT (GG): Innovative productivity tool which facilitates the creation of vertically scrolling shoot-'em-ups.

SIDEKICK (INT.): Integrated pop-up program from Borland which incorporates a note pad, diary, calculator etc, and is used extensively in the PC world. See also ***Borland***.



• Sentinel: An eerie and compelling classic which first appeared on the BBC

SIDEWINDER (G): Superior budget vertically scrolling shoot-'em-up from Mastertronic for the Amiga.

SIG (T): Special Interest Group. Usually set up on a bulletin board, the SIG is a closed portion of the board devoted to the interests of a particular group such as train spotters, stamp collectors or – more recently – explicit, hard-core sex picture devotees. See also ***bulletin board***, ***Knave***, ***Fiesta etc***

SILICON (T): Non-metallic chemical element (Si) used in the manufacture of integrated circuits. Next to oxygen, silicon is the most abundant element in the Earth's crust. It was discovered in 1823 by Baron Jons Jakob Berzelius, a Swedish chemist. Silicon is – relatively – cheap to produce and is used extensively in the wherever semiconductors are needed. See also ***germanium***.

SIMULATION (T): The process of representing some action, event or situation using a computer and software. The most popular simulations are flight simulators which allow computer users to 'fly' an accurate representation of a real aircraft.

SKATE OR DIE (G): Rad game for the Commodore 64 featuring you as someone wot must skate – or die.

SMART CARD (T): A plastic credit card-sized device which contains a computer. The smart card can hold medical records, financial information etc in a convenient form, and is set to revolutionise the banking world. ➤

SNOBOL (L): Developed at Bell Laboratories, SNOBOL (StriNg Orientated symBOL language) is a high-level language used in the manipulation of strings of text, pattern recognition etc.

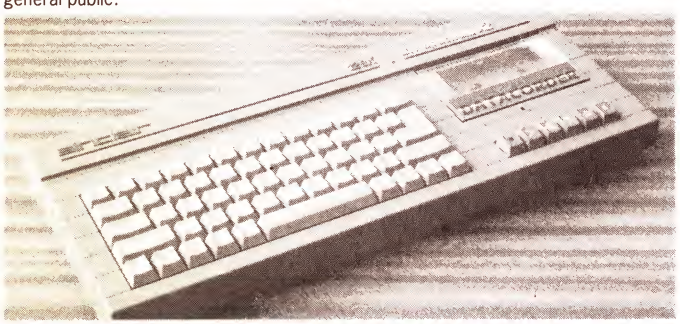
SOFTWARE (L): Instructions and commands used to control a computer. These instructions can be built into the ROM of a computer, in which case they're known as Firmware, or loaded into the machine from some storage medium such as tape or disk.

SOFTWARE ENGINEER (P): Programmer who uses strict methods in the writing of code. Software engineering was devised in 1967 by the study group on computer science of the NATO science committee. The concept is based upon the theoretical foundations and practical disciplines associated with traditional branches of engineering, and is an attempt to significantly reduce the amount of errors when writing a computer program.

SOFTWARE PROJECTS (CO.): Veteran software company famous for its *Manic Miner* and *Jet Set Wlly* which has sadly sunk into obscurity.

SOURCE CODE (L): High level program instructions are known as source code before being translated into commands directly understandable by a computer (object code). See also ***object code***.

SPECTRUM (C): Incredibly popular Z80-based home computer from Clive Sinclair which was the successor to the record-breaking ZX81. The Spectrum still enjoys a high level of support from software houses, peripheral manufacturers and the Spectrum-owning general public.



• Sinclair's Spectrum: Best-selling successor to the ZX81

SPEECH SYNTHESIS (T): Reproducing human speech using machines. Many methods have been devised to reproduce speech, ranging from storing complete words in digital form inside an integrated circuit to the most popular method of using phonemes (AKA Allophones). Phonemes are phonetic sounds which, when combined, form words. See also ***phonemes***.

SPOOLER (T): A portion of memory controlled by a utility program which is used to store data about to output to a printer, thereby freeing a computer for other work.

SPREADSHEET (SS): An electronic representation of a matrix of cells which can be used to store values, formulae and variable names. Because of the fast nature of computers, complex relationships can be built up between the various cells, thereby solving financial and other problems.

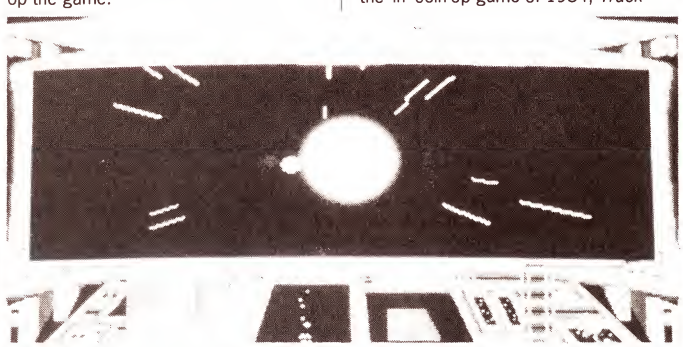
SPY VS. SPY (G): Based on the cartoon featured in *Mad* magazine, this is a two-player arcade adventure which is highly addictive.

STACK (T): A sequential data list stored in memory. Data items can be 'popped' off the stack using LIFO (Last In First Out) or FIFO (First In First Out) methods. The stack is used as a convenient storage method for much-used data items.

STAR (CO.): Far-eastern printer manufacturer which has reached the top in consumer electronics due to range of good quality, cheap printers. The current machine is the LC-10, a printer offering fast colour printing at a reasonable price.

• LC10: Colour printing for the masses

STARGLIDER (T): Over hyped, inferior vector graphics shoot-'em-up loosely based around the *Star Wars* coin-op the game.



• Starglider 2: much better than the original

STARTREK (G): Probably the most pirated game on the ST.

STATIC RAM (T): RAM memory which, unlike dynamic RAM, does not need to be continually refreshed with an electric charge in order to keep its contents.

STOS (T): Replacement BASIC from Mandarin Software for the ST range of machines, which allows users to create professional-quality arcade games. An Amiga version (*AMOS*) will be available in October.

SUBDIRECTORY (T): Many operating systems such as DOS and UNIX allow data to be stored on backing storage in a tree-like structure. The base of the tree represents the *root* directory and subsequent branches the subdirectories. In this way, data can be saved in a much more efficient way. For example, below the root directory you may create a subdirectory *application*. From that directory you have a subdirectory named *wordstar* containing you word processing program with several subdirectories branching off – *letters*, *reports* and *misc*. Using subdirectories instead of lumping all programs and data into one directory, your word processing files and programs are stored in a convenient way which is easy to manage.

SUBROUTINE (T): Segment of code within a computer program designed to perform a particular task such as updating the screen, performing a data sort etc. By writing the task as a subroutine, the same code can be accessed many times.

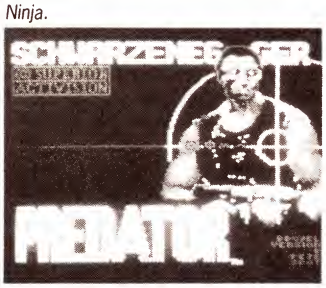
SUMMER GAMES (G): Inspired by the 'in' coin-op game of 1984, *Track and Field*, Epyx produced the definitive home computer versions.

SUPERCALC (T): The original (and probably the biggest-selling) spreadsheet program. The application was developed by Sorcim/IUS corporation in the late 70s.

SUPER HANG-ON (G): Superior bike racer of which the Amiga version remains the best burn-up outing ever.

SYSOP (BB): SYStem OPerator – the person responsible for the running and upkeep of a bulletin board. Sysops have complete control over the operation of a BBS, allocate time to users, set up SIGs etc. See also ***bulletin board***, ***SIG***.

SUPERIOR (CO.): Successful software house which carved a niche for itself writing BBC/Electron games. The company had the clever idea of licensing popular games from other machines, such as *Barbarian*, *Predator* and *Last Ninja*.



• Superior's Predator on the BBC

SYSTEM 3 (CO.) Innovative software company responsible for the stunning *Last Ninja* for the Commodore 64.

• Last Ninja II from System 3

SYSTEM DISK (T): Floppy disk containing programs and data necessary for the operation of a computer system. For example, the IBM-PC and its compatibles use a disk containing PC/MS-DOS and associated files to provide an environment in which users can make efficient use of the machine.

SYSTEMS PROGRAMMER (P): Person responsible for the upkeep of a computer operating system. The systems programmer ensures the smooth operating of the system, writes extensions to the operating system etc.

SYSTEMS ANALYST (P): Person who, using a range of 'tools' designs and oversees the implementation of a computer system. The system analyst is responsible for talking to the prospective buyers of a system to ascertain their needs, determining the types of software necessary for the system to match the needs of the buyers and controlling the work of a team of programmers writing the system.

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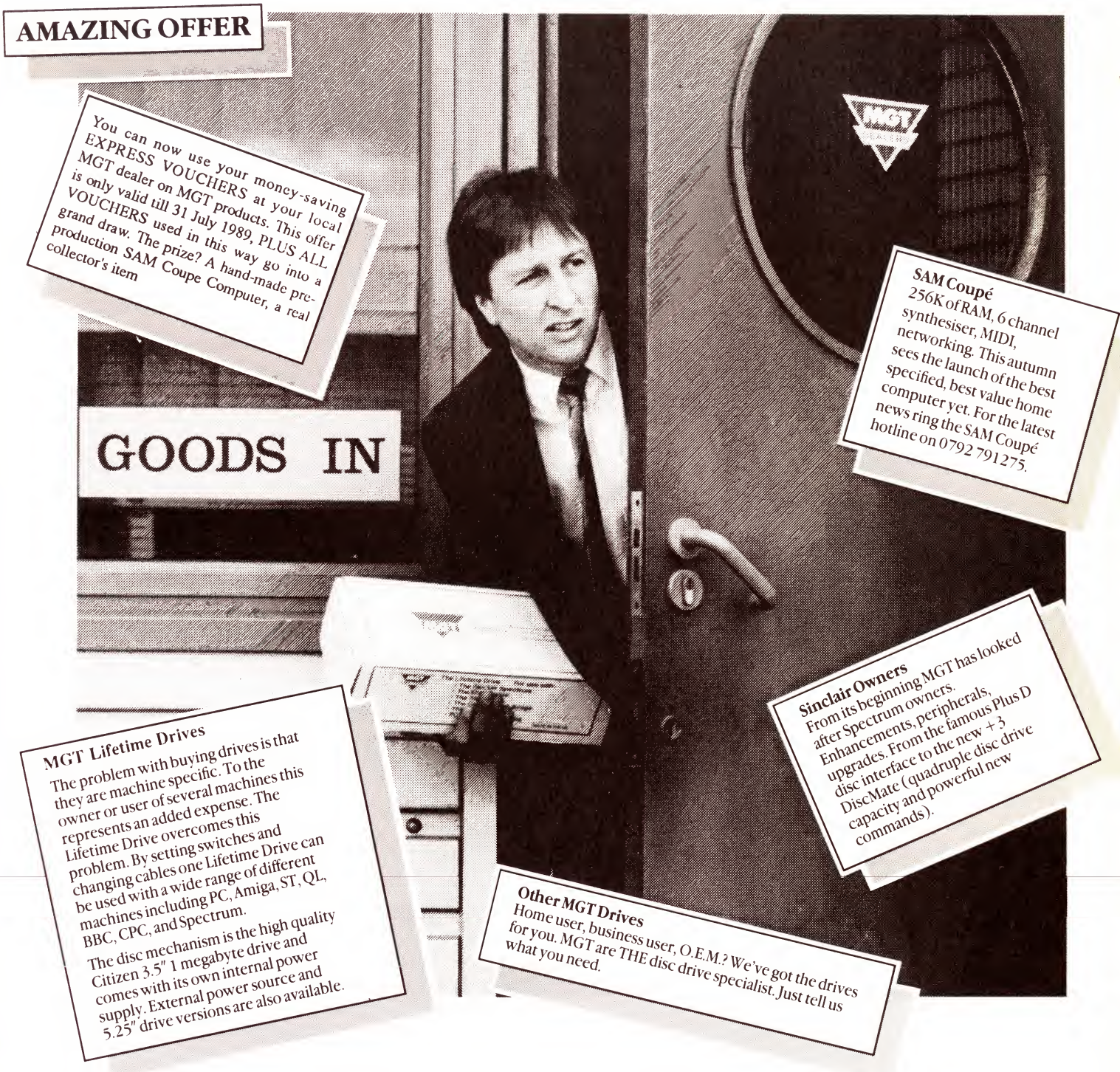
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TRANSPUTERS: REVOLUTION IN DISGUISE?

Inmos' transputer has been with us since 1983. In the six years since its announcement we've all read of the breathtaking speed and enormous possibilities of this futuristic device – but where is it? Where are the transputer-based supercomputers, the incredible graphics packages and games predicted by everyone in the last half decade? Jerry Glenwright explains what's happened...

Six years is a long time in computing. The length of time separating the release of the humble ZX80 and the powerful Atari ST fell far short of six years. On this scale of development, you should be able to walk into high street box-shifter and buy yourself a transputer-driven machine that will wipe the floor with the 16-bit computers currently in vogue, and at a cheaper price. But still the ST, Amiga even the Spectrum dominate the thoughts of prospective buyers looking for a computer.

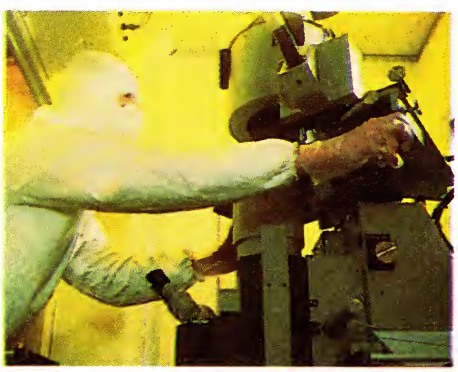
As far as the home computer market is concerned, the transputer is a solution looking for a problem. Word processing, home accounts and games-playing are not applications which require the immense power of the transputer. Computer users who've paid two or three hundred pounds for their machine are not keen to spend another £800 or so on a transputer-based accelerator board which will speed up their games. The ST, Amiga and home PC offer a price-to-performance ratio which is acceptable to the home buyer.

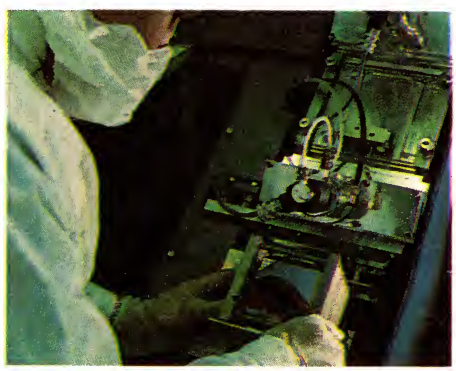
Where in the world

So where have all the transputers gone? There are a thousand companies worldwide currently developing and marketing devices which utilise the transputer. The majority of these companies are based in America, around 200 in Japan and a few in the UK.

Although the initial angle for the transputer was to use it as the first building block of incredibly powerful supercomputers, there are very few manufacturers interested in providing machines of this type. Atari, with its ATW, is the only notable exception. The rights to the ATW (Atari Transputer Workstation) – initially the brainchild of Cambridge-based Perihelion – were bought up by Atari, which also had the idea of building a powerful transputer workstation at a price affordable to the person in the street. Perihelion was left to carry out the development of the machine, and succeeded in producing several prototypes in the space of four months.

After many fits and starts (Atari was forced to change the original name of the machine, 'Abaq', to ATW after it was discovered someone else had already registered the word) Atari has sold 1,000 ATWs, has a monthly production target of 300 to 400 and the machine is selling steadily.





• Masks, gowns, gloves and wellington boots are all necessary to the integrity of the clean room. One tiny particle of dust and the entire production run could be ruined. The average clean room is 500 times cleaner than an operating theatre.

A little application

In the transputer applications arena, the ATW is an exception. The majority of transputers find

Parallel universe

Imagine a room full of clerks. Each clerk has at his disposal a mechanical adding machine and the means of relaying messages to any of the other clerks in the room. Each clerk is working on one small part of an enormous calculation and each time a result is reached, it's passed to all the other clerks to make their own task easier. So rather than a task being performed sequentially until it's completed, it's divided into many parts, each of which is worked on at the same time until finished, and the more people (or processors) added to the matrix, the more the task is divided and the faster it is performed. This division of a task and the processing of it in parallel by many self-contained 'processors' is the concept behind the transputer.

The physical reality of the transputer is a slab of silicon, the large part of which is apportioned to a RISC-based fast central processing unit. RISC (Reduced Instruction Set Chip) is an architecture that facilitates the use of short and simple commands used in repetition which allow the CPU to operate at incredible speeds rather than using complex instructions which take time to process. Positioned on this chip around and connected to the CPU are a ROM memory containing the operating system, RAM memory – usually about 4K – and four channels for I/O known as 'links'. These links allow the transputer to communicate with other transputers at 10Mbits per second full-duplex, i.e. transmissions to and from the chip at the same time.

The concept of parallelism is one that has been around since the beginning of computing. Previous attempts at parallel processing involved sharing one processor between several tasks, applying tiny slabs of the processor's time to each of the tasks and the end result – although slow – appears to be a machine working on several jobs at the same time (this is the case with many mainframe machines, where 20 or more users are supported at the same time, each receiving a slice of the processor time). The next notable method was to use several processors, each able to process a task of its own accord. Unfortunately, each processor depends upon the use of shared RAM, ROM, address and data buses etc. Consequently, each is significantly slowed in its progress.

The transputer is an entire, self-contained computer on a chip with its own in-built I/O ports. A single transputer running at 20MHz can process information at the immense rate of 10 MIPS, i.e. 10 million instructions per second. Add a second transputer and you double the processing power to 20 MIPS, a third and you've got 30 MIPS etc. And remember, each transputer can process information independently of any other device using its own RAM, ROM etc, so adding more transputers allows them to process more information in parallel, hence the increase in processing power.

their way into image processing, accelerator boards and embedded control, i.e. the boosting of existing systems, not creation of new machines.

Image processing is an area which has benefited greatly from the processing speed provided by a transputer. The military make great demands on existing technology in order to process pictures taken from reconnaissance aircraft and satellites, as well as ships at sea. With the recent development of an Ada compiler (used extensively by the armed forces) which can take advantage of parallel processing capabilities, Inmos is currently engaged in several defence-related projects.

Smooth manipulation of graphics is a processor-intensive operation that requires maximum computer muscle to achieve acceptable results – the transputer fits the bill admirably.

A 32-bit transputer running at 20MHz coupled with existing technology such as the Sun workstation constitutes a professional graphics tool second to none. Sun is a computer manufacturer renowned for its powerful graphics workstations and there are two companies providing add-on boards for the Sun machines alone. One of these is UK company Gems of Cambridge, also responsible for accelerator boards for the other fast workstation manufacturer, Apollo.

Board decisions

Rather than adopt the transputer-based computer route of its rival Atari, Commodore has plumped for an add-on accelerator board for its top of the range Amiga A2000 which significantly enhances the computer's capabilities, provides the machine with almost supercomputer status yet was – relatively – cheap to develop using existing technology.

Many other manufacturers have decide that providing accelerator boards for existing machines is the best way of getting the transputer into general purpose computers. IBM and Apple are just two of the large computer companies currently being supplied transputers by Inmos.

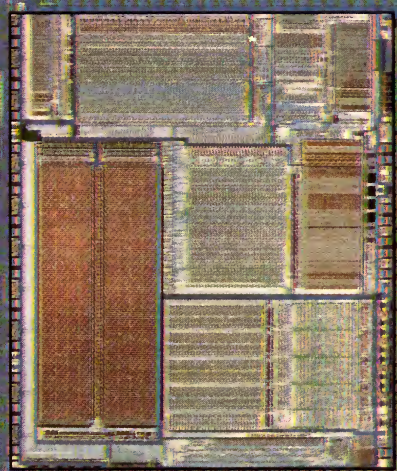
It would seem, then, that the way forward for the transputer is as a secondary – almost peripheral – device which boosts the abilities of current systems rather than replacing them entirely with new hardware.

You'll find transputers in industrial robots, CAD/CAM workstations, speech recognition, nuclear power station control, a linear algebra library, submarines, avionics data gathering and all sciences from fluid dynamics to geophysics. They're everywhere, but in low profile.

The reasons are partly economic but mainly the usual reluctance on the part of venture capitalists and end buyers to risk money on yet another computer, albeit a powerful transputer-based one, in case it should fail. Computer users, particularly corporate users, are notoriously conservative when it comes to buying new equipment. IBM has relied heavily on this foible of the corporate buyer to ensure constant sales for the last 30 years.

Inmos has sensibly aimed the transputer at slightly lower-key applications to achieve maximum penetration of the market, and by doing so is set for immense success. ●

• (Above and below) The transputer is a complete computer on a chip. There's ROM and RAM memory, I/O lines to the outside world and buses between all components as well as a 32-bit RISC-based microprocessor which, at 20MHz, can handle 10 million instructions per second. Add more transputers and you double, triple, quadruple the power.



From neutron stars to nose jobs

Some of the wackier uses of transputer technology

● *Fingerprint analysis* A joint project between Logica and Semacap has produced a machine which recognises fingerprints ten times faster than conventional technology

● *Robotic sheep shearing* Merino Wool Harvesting LTD of Australia has revolutionised its sheep shearing by using transputers in the shearing machines

● *Plastic surgery* The University College Hospital is using the transputer to create 3-dimensional images for planning facial surgery

● *Astronomy* The Cerro Tololo Interamerican Observatory based in Chile is making advances with its use of transputers generating digital waveforms to control astronomical detectors

● *Film* The National Film Archive at Middlesex Polytechnic is using the transputer to reproduce old films before they disintegrate and to improve the quality of the image

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Blitz is good...very good
and also very cheap!

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MIDI mag

ST MIDI owners have had a raw deal watching computer monthlies to find articles about MIDI. With the MIDI world constantly changing, books on the subject are virtually useless. But with any form of written media there's little opportunity for exchanging any voices or sequences created using MIDI. However, an odd magazine which has gotten around these problems celebrated its first anniversary last week. *Music Matrix* is an original concept because the whole thing is entirely disk-based.

'There's a tendency', says E. Nesbit, editor 'for people to think MIDI-owners have bottomless pits of money. *Matrix* can provide public domain software that appeals specifically to poorer midi enthusiasts, with editing software and voice-capturing programs crammed onto each disk. Until now the magazine has been run as a quarterly affair, with one major piece of MIDI software, tutorial sessions for assisting newcomers to MIDI, letters pages as well as voices and sequences submitted by readers. Just recently, however, it has been switched to a bi-monthly magazine, retailing at £10 per disk.

At present 200 disks are sold each quarter, so interest is small, but with users from six to sixty-five, MIDI is certainly a popular sport.

Music Matrix is based in Scotland. Tel: 0582 714887.

Technicalities

The end of last week saw computer suppliers Hi-Tec under the watchful eye of a BT expert who's testing their latest modem – the EC2400 Quad Speed, retailing recently for £279.

Hi-Tec has been selling this modem even though it does not have BT approval and hence cannot officially be connected to BT 'phone sockets. This circumvention of the regulations has meant that the EC2400 is a bargain, with baud rates up to 2400 bps. Once BT approval has been established, this price tag will rocket to £399. I managed to lay my hands on one recently and the features on offer are startling.

The EC2400 can be connected to any ST and offers MNP level 5 data compression, which means that data transfer can take place at speeds of up to 4800 bps. Speed buffering means that even though most ST comms software is appallingly bad at handling split baud rates such as 1200/75, it's still possible to log onto these systems.

One point which Hi-Tec appears none too eager to publicise, however, is that there are problems with the ROMs inside the EC2400. Micheal Spalter, head of Hi-Tec, refused to specify the exact problems but he did say that new ROMs would be supplied when they become available. Hi-Tech can be contacted on: 01 959 6808.

Viral infections

The ST scene, previously immune to the dreaded virus now seems beset by a virulent set of the little runts, causing all sorts of problems for unsuspecting ST owners.

One recent one was distributed on Llamasoft's Gridrunner in what must be either a mysterious master plan or the result of some bright spark's cock-up.

This eager little virus cleverly hides itself until a disk has been accessed five times. Then it gets down to action by causing the mouse to run in the opposite direction so that movements to the left cause the screen icon to move right. Llamasoft says that Gridrunner is now virus-free.

Another frustating virus is the one which appeared on the Flair Paint disks some time ago. This apparently helpful virus copies itself onto a new disk each time you try to save a track. It causes the screen to beep and flash.

Sources in the know say that additionally the virus checks for the presence of a certain piece of code on the disk. If this code is found then the disk is wiped clean. So far, no-one has created the 'female virus' which activates it...

Both viruses can be destroyed using CRL's new Virus Killer which claims to pull the legs off of all viruses currently active on the ST.

CRL can be reached on 01-533 2918.

Here comes that dragon again

People have indicated for a while that the infamous *Dragon's Lair* will arrive on the ST soon, but no-one seems sure when.

Dragon's Lair was the laser-disk cartoon arcade game which caused a sensation some years ago. It reached the Amiga at the end of last year, with most of the phenomenal action scenes still intact. Conversion to the ST looks to be damn near impossible. Readysoft is the US publishing house in charge, so I contacted David Foster, project manager of *Dragon's Lair* for the latest update.

He insists that it will appear around September or October – however he later admitted that this might be optimistic. He did say, though, that the programming team have been given certain specifications which the new *Dragon's Lair* should meet. One of these is that it will run on a single-sided 520K memory machine.

This would be a remarkable achievement considering that the Amiga version required 1 Mb of memory and six double-sided disks to run properly. Since single-sided ST owners cannot access side B, then they'll only receive half a game – perhaps fewer challenges. This way it can stay at six disks.

Entertainment International will be handling distribution of *Dragon's Lair* here in the UK but it seems less optimistic about the possibilities for 520K owners. It said that the final version will be likely to run on 1040 STs or above. Hence only double-sided disks are required.

Demo versions are due out in the not-too-distant future so I'll soon be able to compare the ST and Amiga versions for you.

Kim Harmagh

• Singe the Dragon – melting an ST near you soon?

AMIGA BLIT

Mighty mouse

George Thomson Services has announced the impending release of several very exciting products for the Amiga.

With the imminent release of the Amiga Amix Unix card (when can I have mine, Commodore?), GTS has licensed a special three-button optical mouse which is not only compatible with AmigaDOS, but also with the Unix windowing environment, XWindows (hence the extra mouse button). Even if you can't talk the bank manager into giving you a second mortgage for the Amiga Unix environment, the mouse is still is an excellent alternative to Commodore's offering.

Hard up *A-Max* users who are fed up with the hassle of mini transfer disks but can't afford the high cost of Apple's external drive, will also be pleased to hear that GTS is soon to be selling a budget priced *A-Max*-compatible disk drive which will allow you to directly read 800K Macintosh format disks (it'll even make the disk automatically pop out of the drive like a real Mac – well impressive!!). The exact price is still to be finalised but it is hoped that it will sell for around the £180 mark. For serious users of *A-Max*, this drive will probably be seen as more of a necessity than a luxury.

Snippets...

● MirrorSoft has confirmed that it is currently working on an updated version of its popular *Falcon* flight simulation that will allow players to use an analogue 'yoke' type joystick like that marketed by Voltmace. Voltmace's unit, if you haven't already seen it, is shaped like an aircraft control yoke and features realistic aircraft controls. The unit currently works only with *Flight Simulator 2*, but MirrorSoft's announcement is sure to win the joystick a whole new batch of devoted users.

• Now you can use an analogue joystick to help you maintain peace, justice and the American way

● The Amiga MIDI scene really seems to be steaming along with the announcement by Passport Software that the Amiga version of its popular PC/ST/Mac sequencer, *Master Tracks Professional*, is nearing completion. The sequencer has already earned itself an impressive reputation for being a real heavyweight on other systems and the Amiga version promises to offer more of the same. *Master Tracks Pro* is an extensive 64-track MIDI sequencer that boasts automated punch-in and out and SMPTE sync via MIDI time code.

● MicroDeal has finally released the Amiga version of its ST adventure creation system, *TaleSpin*. The system allows the user (you lot) to produce complex graphic adventures from within a friendly menu-based environment. I've only just had the package land on my desk and so haven't had the time to take a look at any great depth, but look out next week for a review.

Now that the ST and Amiga software markets have virtually levelled out and other software producers are releasing Amiga software at a similar rate to the ST, isn't it time Incentive got its fingers out and produced an Amiga version of *STAC*? (*AMAC* perhaps?). Why it is letting such a marvellous opportunity to make a lot of money slip through its fingers I do not know! Come on Incentive, get Sean Ellis on the case as soon as possible (but make sure he finds a beta tester that doesn't have a dodgy fridge this time!).

● OK, it's down on my knees and grovel time. I've been trying desperately to find an Amiga-based voice editor for my Casio FZ-1 sampling keyboard (Yes, I'm a musician as well as an Amiga nut!), but have as yet failed to find one. If any company that sells such a piece of software, or anyone who has heard of such a piece of software for the Amiga would like to contact me at the address quoted earlier, I would be extremely grateful. Thanks.

The dream machine

Imagine that you are head designer at Commodore-Amiga Inc and it is your responsibility to design the next generation of Amigas. Max Toy, the 'Mr Big' at Commodore comes to you and requests you draw up the specification for the next generation of 'Super Amigas', the A4000. What would you include in your super-dooper Amiga? – mega high resolution screen modes with a colour palette of millions instead of the current thousands? How about a 68040 processor and 68882 maths co-processor driving the thing while dedicated parallel co-processors handled just about every other function? How much memory would it have? 1 Megabyte? 2 Megabytes... or perhaps even 100 Megabytes?

Why not send a short description of your 'dream Amiga' in to *AmigaBLIT* and if I receive enough, then I'll draw up a description of what you Amiga users really want from Commodore's R&D labs. The address, as ever is: **Jason Holborn, AmigaBLIT, New Computer Express, 4 Queen Street, Bath BA1 1EJ.**

Jason Holborn

DOSing about

Have you ever written a program that opens a custom screen to handle all I/O, but when a system requester pops up (you know the type, "Please Insert Volume Whatever in any drive") your screen gets flung straight behind the Workbench screen so that you have to manually retrieve it? As you will no doubt realise, this can be a real pain for the user as they have to manually bring the screen back to its original position before they can continue.

The code fragment below is a short AmigaBASIC program that re-routes the DOS window pointer to the currently active window. All you have to do to use it is to add it to all your programs immediately after your custom screen and output have been opened.

```
  LIBRARY "exec.library"
  DECLARE FUNCTION FindTask&(task&)
LIBRARY

  MyTask& = FindTask(0&)              :'
Get Address of Process structure
  TempPointer& = PEEKL(MyTask&+184) :'
Save default window pointer
  POKEL(MyTask&+184), WINDOW(7)       :'
Write RastPort address
```


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PC UPDATE

The age of reason

As you will have read in last week's *Express*, Amstrad is to reduce the price of its PC 2086 micro by up to £150, depending on configuration. The intriguing bit was the quote from Malcolm Miller, Amstrad's marketing supremo, in *PC Week*. Referring to IBM's price changes on its Model 30, Miller said "We have seen that the Model 30's pricing manoeuvres have had only a marginal affect so we feel it is the right time to offer the market an incentive to buy our 2086 model".

Now Amstrad's marketing methods have always been something of an enigma, but it still seems to me that if my company was yomping all over the opposition I wouldn't consider it a prime time to reduce my prices.

A little GEM

For those who use GEM and are tempted to invest in DR's excellent arty package *Artline*, pay heed to the following sorry little tale. Having received my nice little 386 machine from Datamation Services (see last week's *PC Update*), I decided to install my review copy of *Artline*.

To do this, DR advises that you use the latest version of GEM, V3.11R, supplied with the program. This is specially geared to the *Artline* program, which uses a sophisticated scheme of font outlines for its text, in a similar way to PostScript (only without needing a PostScript printer). This, in many ways, is the ideal solution for high-quality output, and it would be a very useful facility for DR to build into GEM itself, rather than having it restricted to *Artline* alone.

• A printout from GEM Artline, to show what can be done if you are blessed with artistic skill – it was not created by this columnist.

After installing *Artline* and checking that it worked, I set about installing *Timeworks DTP* as one of my favoured GEM-based publishing programs. The installation was going well, and I had specified an HP LaserJet II as the primary printer for the system, when I was surprised – nay, amazed – to see the program ask me to select either the Apple Laserwriter or Laserwriter Plus font set. As you may be aware, the Laserwriter is a PostScript printer, and resembles a LaserJet II only its underlying Canon laser engine. This was the start of my worries, and they were confirmed when Timeworks refused to run on my system.

A phone call to GST/Timeworks Softline confirmed that *Timeworks DTP* will not run under version 3.11R of GEM, which effectively means that you can't run *Artline* and *Timeworks* together. Someone needs to look at this.

Fujitsu HD Problems

WARNING! THIS ITEM CONTAINS TERMS WHICH MAY CONFUSE THOSE OF A NON-TECHNICAL DISPOSITION

Another little funny that cropped up with the 386 machine was that it was supplied with a half-height, 86 Mb (unformatted) hard disk. The interesting part of the preceding sentence is the juxtaposition of the phrases 'half-height' and '86Mb'. Most hard disks over about 60Mb are full height devices, as the easiest way to increase the capacity of a drive is to add extra platters and heads. The physical space these take up means that it's not usually possible to squeeze more than seven heads into a half-height case.

Fujitsu being the cunning Japanese disk-maker it is, has left the head count at seven, but increased the number of tracks on each platter, or cylinder count to give it its technical name. This appears really clever, until you come to format the beastie under DOS. DOS assumes a maximum of 1024 cylinders on any hard drive and provides only 10 bits in the boot sector of the drive to store the cylinder count. Using this maximum allocation formats the drive at 60Mb, wasting 9Mb in the case of the Fujitsu drive.

The only way round the problem seems to be to use a hard disk system driver, such as *Speedstor*, which is loaded each time the machine is started and takes over the low-level control of the hard drive. With this software you can exceed the 1024 cylinder limit. The only potential problem is if other software clashes with this non-DOS way of doing things.

Final REMark

As well as the ECHO statement that DOS provides for displaying messages from batch files, there's also a REM statement. This acts similarly to ECHO, but is in truth more akin to a REM in BASIC. Anything typed on the same line of the batch file, after the REM, is ignored by the batch file processor but is displayed if ECHO is switched ON. ECHO, of course, displays any message irrespective of its own setting.

Simon Williams

Kick-Off

Various crazes reverberate around the Future Publishing offices from time to time, including Frisbee, inflatable Zeppelins, dating Norwegians and pub quizzes. The latest such foible to infest itself is the Anco game Kick-Off. This is a soccer simulation with the full number of players on either side, for two users or one and the machine. The game view is from almost vertically above and control passes automatically to the two sprites nearest the ball. Most of the standard rules are implemented, including fouls and yellow and red cards for painful play. One Future player has succeeded in having 6 of his/her players sent off!

The game's main strength is its atmosphere. There are crowd cheers, throw-ins, corners, goal kicks and some breathtaking saves – plus rumours of variable wind strength and evil refs.

The good news is that a PC version is planned. The bad news is that the sound on a PC will, as usual, be rather less than atmospheric, unless it's digitised, of course.

CPC centre

Boost for *Stop Press*

Out soon is a new utility specifically for speeding up and enhancing *Stop Press*, *AMX's* remarkably successful DTP package.

X-Press gets around the "one page at a time" problem of *Stop Press* by compacting pages so that they take up less disk space. So now you can have four or five *Stop Press* pages per 3" disk side, as opposed to two.

These compacted pages can have another section added to them at the bottom or top. If you print a condensed page at the standard A4 size, then it's squeezed vertically to allow more detail. And you can also print at foolscap size.

A further use is that you can save pages to 5.25" or 3.5" disks, cutting down on the time-consuming disk swapping *Stop Press* users are so accustomed to. Furthermore, pages being printed can be stacked up, removing *Stop Press*'s need to load each one before printing it.

X-Press is expected to cost about £20, which is certainly not cheap for a program that merely improves another, already fairly expensive, one. On the other hand, if you already have *Stop Press* or have decided to buy it, you'll find it indispensable. The program will be available, probably exclusively, through the Mail Order pages of *Amstrad Action*.

French for software

The imminent arrival of the strikingly good-looking *Purple Saturn Day* from Infogrames has made me wonder what on earth is stopping someone importing more software from France, where the Amstrad is absolutely huge. I don't even think it's an English language version is necessary for most games, since the scenario is usually just an excuse to zap the aliens, fight the dragon or whatever.

I know US Gold has an arrangement with Loriciels to publish some ten or a dozen titles, but there is a very large back catalogue that has never seen the light of day this side of the channel. All it needs is some shrewd box shifter with his ear to the ground to put his foot down with a firm hand *(that's enough mixed metaphors – Ed)*.

What an *Exolon* poke!

Julie McGlynn of Leeds has written me a begging letter. "Please please please," she wants to know, "can you help me? I'm having the most terrible time playing Hewson's Exolon." Fret not, Julie (and get up off your knees), for that nice man Peter Featherstone, who also comes from Leeds has just the thing: a poke for infinite grenades, ammo and lives.

```
1 ' Exolon - tape
2 ' by Peter Featherstone
3 ' reprinted from Amstrad Action
10 BORDER 0:INK 0,0:INK 1,6
20 INK 2,18:INK 3,26:MODE 1
30 MEMORY &3FFF
40 LOAD"!LOADER",&4000
50 FOR f=&BE80 TO &BFFF
60 READ a$:if a$="END" then 90
70 POKE f,VAL("&"+a$)
80 NEXT f
90 CALL &BE80
100 DATA 21,89,be,22,53,41,c3,00
110 DATA 40,af
120 DATA 32,59,11:' inf ammo
130 DATA 32,7a,1f:' inf grenades
140 DATA 32,25,2a,32,25,2b:' inf
    lives
150 DATA c3,00,01
```

Rick lives dangerously

Over the past few months there have been a surprising number of excellent games for what might simplistically be called the young CPC owner.

I say simplistically because they're actually games that appeal to the younger side of many games players, such as myself, who are way past their sell-by date.

I'm thinking of games such as the Oliver twins' *Dizzy* and its sequel; *Bubble Bobble*, the sequel of which is coming later this year; and more recently *Skweek*, which again is expected to appear as a sequel. And coming up soon is Hewson's *Mazemania*, featuring loveable, cute Flippo.

Now there's another. It's from Firebird and it's a sideways and vertically scrolling platform adventure with puzzles called *Rick Dangerous*. Rick is a sort of comic version of Indiana Jones, being approximately twice as tall as his hat and not nearly as broad. His weapons are a gun, a stick and some dynamite, all of which are required to get him past the numerous Amazon indians, Egyptians and other assorted bad guys.

What's so much fun about *Rick* is the sprite movement: he struts along busily, his heels clacking loudly, while his enemies have an extraordinary way of bouncing away when he zaps them. And the Egyptians dance along hilariously doing that peculiar sideways dance (as celebrated in a recent Bangles hit).

It's not a game that will appeal to everyone, but if you like games that make you laugh you'll love this one.

• *Purple Saturn Day* – will it set off a fashion trend for Gallic games?

AEM thrives

Just a quick mention for the second issue of the *Amstrad Enthusiast's Magazine*, out now. It's a nice one, well worth the paltry 60p it'll cost you when you write to ***AEM*, Highfield, Coombe Keynes, Near Wareham, Dorset BH20 5PS**.

Incidentally if you edit or write for a CPC fanzine and you'll like to spread the word, send a copy of your latest issue to Steve Carey, *CPC Centre* , *NCE*, 4 Queen St, Bath BA1 1EJ. And there's a series beginning this month in *Amstrad Action* all about producing magazines on the CPC.

Steve Carey

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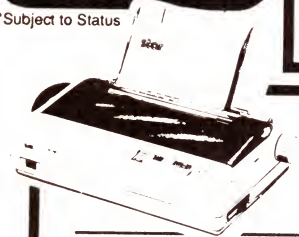

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SPEX

Sound advice

Can any wonderful reader out there shed some light on the infamous +3 sound fault? If you're a non-sufferer this basically makes a perfectly respectable tune sound like a scratched Kylie Minogue record playing in a goldfish bowl.

I ask because of a heart-rending letter I was sent by Dave Rogers, a professional music programmer whose work you probably heard in *Cybernoid* and *Stormlord*. So far the poor chap has tried ten Plus 3s and is yet to find one without distorted sound. When Dave hassles Amstrad about the fault they "keep telling lies and deny that the fault ever existed!" No surprises there then. He's not totally in the dark, having tracked at least part of the problem down in the machine's internals, where the three outputs from the AY music chip are tied together!

As per usual, I'm not much help and can only refer distorted +3s to the tip of the week in *Express* 28 where regular correspondent Grant Punchard suggests the problem is caused by the TV lead and can be overcome by connecting the save plug from your machine to an external amplifier. What Dave is curious to know is whether the fault extends to all +3s or just early models. Scribble down all you know and send it in the strictest confidence to the usual address.

• Sounds awful? The +3's distorted sound is still baffling Speccy owners

Reserve prices

Special Reserve is a mail order software club that can save you countless quidlets when buying games. Its latest list of Speccy stuff contains some no holds barred bargains like *Starglider* for £1.99 on tape and £5.45 on disk and *Captain Blood* at the reasonable sum of £2.99 cassette, £4.99 disk.

The new titles stocked are also much reduced – *Times of Lore* at £5.97/£7.97, for example. Of course, there's the obligatory catch, which in this case is a £4 membership fee and a rather excessive £1.50 p+p charge. Still, it seems like more of a large scale operation than the Honest Ron's Software Bargains type of outfit, and if you buy a lot of games there's money to be saved.

Send an SAE for details to **Special Reserve, PO BOX 847, Harlow, CM21 9PH.**

Loading at last!

Since I brought tears to your eyes many issues ago by featuring one reader's +2A incompatibility problems, I've been accosted on the street several times and told that troublesome games will indeed load into a +2A providing you follow three easy steps. 1) Enter +3 Basic: 2) Type "SPECTRUM": 3) Type LOAD "". Fetch those games out of the bin without delay!

Molecule manipulation

Despite the fact that all you'll ever find in the shops are games, games and possibly even more games, there are in fact thousands of specialist software titles available for your Speccy. Well, quite a few at any rate. This very week I received another one to add to the archives.

Called *Molgrum*, it claims to be "a program that allows structures of up to 240 atoms to be constructed, displayed and manipulated." Having fallen asleep at the vital moment in a Chemistry lesson I can't vouch for that, but in the main it's easy to get where you're going thanks to the menu control and helpful 48-page manual.

As well as describing how to jiggle atoms around, the author, Ian Hughes, says that "there is plenty of scope for manipulating drawings of almost any kind."

One thing's for certain – *Molgrum* is the only program of this type for the Spectrum, and if molecules are your thing you'll want a copy right away.

Molgrum is available for £12.90 on tape and disk from **Dr I Hughes, 37 Church Walk, Sawbridgeworth, Herts CM21 9BJ.** If you're undecided, send an SAE for an information sheet to the same address.

Long in the tooth

Just when you thought it was safe to read a computer mag without finding this cliché, someone finally snaps up (groan) the licence to that ancient flick which was knocking 'em dead in the mesozic period – *Jaws*.

For those of you who weren't alive in the 70s (a lucky escape), the plot involved a large fish and its human-eating escapades. You might think all this gore would make it the natural computer game, but the final result turns out to be a really boring arcade adventure – a pity, because the actual Jaws sprite is brilliant and there's a lovely rendition of the original theme tune. Let's just hope no one at Screen 7 comes up with the idea of licensing the sequels as well.

Robin Alway

Rewards unclaimed

I'm still not collapsing under the weight of your tips, pokes and cheats. Surely you all read and were astounded by the reward I offered a few weeks back?

In an alarming fit of generosity I actually promised a free piece of software for the senders of the best aids to cheating. Even if you don't bag the freebie just think of the invaluable help other Spectrum owners will receive, oh and your ego as well of course. The address for all correspondence is Robin Away, SPEX, New Computer Express, 4 Queen Street, Bath BA1 1EJ.

SECTOR 64 SECTOR

Writing games

Where do you start when writing a game? Well, I can't speak for all programmers, because most people tend to work in different ways – but there are basically two methods.

One way is to work the whole idea out on paper with diagrams for graphics and movement etc. This is the organised way – as you might have noticed – and the one most software houses use if writing an original game (which I'm sure they don't do much of any more).

But for most programmers just starting out, it's more usual for them to just write what inspires them most. As soon as you've got something that looks playable (and you're really proud at this stage), you want some nice graphics done – so you get one of your artistic mates to draw them.

But if you're like I was, you don't really know what you want – so you have a peek through all the latest mags looking at the coolest game graphics, trying to get an idea. Once you've taken your pick, then you can get all the graphics drawn.

The next tricky stage is to design a map for the playing area, and this is where all your imagination goes through the window. So what do you do? You put anything anywhere – voila!

So – we have a game, but who's going to do the music? Well, we don't know anyone, so lets do some sound fx instead.

So what do you end up with? You say to yourself "it never turned out how I wanted," but then they never do. The question is, will anyone buy it?

The only way to survive as a professional programmer is to work off contracts from the start, but most companies (and we don't blame them) want to see a track record. It's hard to show one when you haven't got one! There are other ways to do it, one of which is to knock up a library of important game routines, the ones a company would expect to see.

Tools

The best method for writing software on the C64 is to have an assembler on a different computer using the C64 as a target machine. A good choice for 64 programmers is the PDS from PD systems. It makes programming and debugging very fast and easy. *Three in One Editor* is a good tool for creating sprites, chars, windows for games and another good thing about it is that it's PD. Another good tool is the graphics creator released by Firebird on their budget label. This has the same features as Three in One, but is enhanced and contains a lot more.

There is also the extremely useful Expert cartridge, which includes a very powerful machine code monitor and many useful utilities.

Ian + Mic

Solutions

If you have any wicked cheats for games that others should know about, then send them to Sector 64, New Computer Express, 4 Queen Street, Bath BA1 1EJ.

ARCHIMEDES LORE

Archie speak in strange tongues – 1

The compatibility of the PC emulator on the Archie never ceases to amaze me. Having used emulators on a variety of other machines, normally including hardware as well as software, the Acorn software has proved by far the most robust and versatile. It'll run all the standard applications, assuming it has enough memory, and plenty of the outlandish ones as well, including TSRs, which sit in the background on a PC and provide a limited form of context-switching.

All we need now is a version of the emulator which supports VGA graphics (640x480 resolution in up to 256 colours). Acorn has provided a suitable graphics mode on the Archie, so there must be some room for expansion, there. I've also heard rumours that the only way Acorn could obtain permission for a 'legal' IBM PC emulator was to *slow it down* to its current speed. I wonder...

Archie speak in strange tongues – 2

If you would like more speed out of your Archie in PC mode, a new product from Mach Technology, due out in time for the Acorn User Show, may fit the bill. This is a single width podule housing a 12 MHz 80286 chip and 640K of RAM. It gives full PC compatibility through a custom-written BIOS chip, which translates all the IBM-type calls into I/O calls on the Archie's firmware.

According to Mach, the podule will run at around the going speed for an 80286. If this is so, the podule should run about seven to eight times as fast as the current software emulator. Not bad for an all-in price of £344, including a version of MS-DOS to run on it.

Bertrum Carrot

You thought 4 mips was fast

The Archie is still generally acknowledged as one of the fastest micros available, but there are always those who want/need that bit more speed.

This could soon be provided in the form of the ARM 3 chipset, which is the latest RISC development from Acorn. It uses 1 micron archie-tecture, rather than the 1.5 micron currently used, and employs an on-chip cache to speed data throughput.

The first application of this new chip is likely to come from Aleph 1 Computing (0223 811679), which is planning to manufacture a daughter-board running the new chipset at 25MHz. This will be a dealer-upgrade for those who can afford the £689 price tag. The board will plug into the existing ARM chip socket with the ARM 3 and associated chips mounted on the daughter board.

Aleph 1, which is still awaiting samples of the new chips to complete its prototype, expect them to run RISC OS at least four to five times as fast as the current machine. This should give a beefed up Archie a speed rating of close to 20 MIPs.

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PCW PATCH

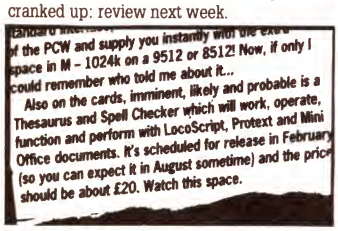
Symbolic tip

For superscripts and subscripts – in chemical or mathematical use, or for numbering footnotes – put them in seventeen pitch, super- or subscript and bold. So in *LocoScript*, before the number you have (+P17)(+SR)(+B) and after (-P)(-SR)(-B).

Release schedule

Micro Designs: Yes folks, this amazing DTP package is here and reviewed fully on page 18 of this issue. Very impressive it is too.

Mini Office2: is also out, at last, after all Database's problems with programmers reputedly doing a runner and leaving incomprehensible C code behind them. A copy is on my desk and waiting to be cranked up: review next week.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space in M – 1024k on a 9512 or 8512! Now, if only I
could remember who told me about it...
Also on the cards, imminent, likely and probable is a
Thesaurus and Spell Checker which will work, operate,
function and perform with LocoScript, Protext and Mini
Office documents. It's scheduled for release in February
(so you can expect it in August sometime) and the price
should be about £20. Watch this space.

• Rob Ainsley, New Computer Express December 22nd 1988. Sorry, Rob, you were two weeks out

At your leisure

Dr M Callaghan of Liverpool asks me which games I would recommend for the PCW. You don't mention what sort of games you're interested in so I'll have to guess:

Scrabble – a very good implementation of the board game. Tough to beat; plays words like AYU and VAIL (try finding that in the OED!) and scores 350-400 on the top level.

Chess – *Clock Chess 89* is very strong and will push even a good club player. Plenty of options like blindfold play, Kriegspiel and so on and you can set time limits to the moves.

Tomahawk – Flight simulator; you fly an Apache helicopter round shooting things. Very detailed.

Tetris – A sort of scrolling *Krypton Factor* test. Incredibly addictive, invented by a Russian at the USSR Academy of Sciences. Don't ask what it's about, just go and buy it!

All the above will be available from any decent mail order place, so shop around in the ads of the magazine *8000 Plus* for the best bargains. *Tetris*, by the way, won't work on a 9512 (officially at least).

Basil Pigg

Pigg Book of Records

● *Worst manual*

The most incomprehensible manual ever written was that supplied with the DK'tronics' music add-on which enabled your PCW to play tunes. The sixteen-page booklet contained nothing but machine code and jargon and the tutorial section consisted solely of the words "Music is a series of tones which have mathematical relationships."

The company went bust in 1987.

QL corner

Revisor by Digitrix

Revisor is one of those rarities for the QL – an educational package.

As the name implies, it is a revision aid, and information may be stored so that it can be reviewed as: multiple choice questions, question and answer, or in the form of pages of text, using a 'memorise' facility. 'Memorise' allows sections of the screen to be blanked and restored repeatedly, to assist in the rote learning of facts. After each session the student is informed of his or her score.

Revisor is supplied on disk or cartridge, with a comprehensive 14-page manual.

The program comes with five files – *French*, *French2*, *Chem*, *Phys* and *Quiz*. However, the teacher may create his or her own files, for any subject, using a built-in edit facility.

Having passed A-level Chemistry a long time ago, I tried the *Chem* file for myself, and was quite impressed.

A great deal of attention has obviously been paid to the user interface, and both the teacher creating the material, and the student using the resultant files, should find the program very easy to use.

The program should be of use to a wide range of students – from quite young children up to university level. Parents as well as teachers should find *Revisor* of interest, especially if they are able to compose their own files.

Revisor is available for £14.95 (disk/cartridge) from **Digitrix, Wishingtons, Porkellis, Helston, Cornwall TR13 0LB**. A demo version of the package, including the manual, is £2.00, refundable on purchase of the full version.

Philips CM8833 colour monitor

Since I use a Philips CM8833 monitor with my Amiga (sorry about that), I thought I'd try it with the QL. The display was excellent. If you are in the market for a colour monitor, I can recommend the CM8833, although they are a bit pricey at £270 or so. A SCART lead is advisable, and these are available from Care Electronics for £11.50. Care is on (0923) 672102.

John Torofex

Wobbly ROMs

Former users of the ZX81 will recall the problems with "wobbly" RAM expansions. Some QL users with software in ROM plugged into the cartridge slot at the back of the machine have experienced similar problems, with the machine "crashing" or "locking up".

This is generally due to oxidation of the contacts on the cartridge – they are not gold-plated. If you experience this problem, try cleaning the contacts by rubbing them with a tissue moistened with switch cleaner (available from shops repairing radios and TVs).

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BEEB BOX

Adventurous release

Friends readers and countrymen! lend me your ears. For now is the winter of our discontent made nobler by the summer of this glorious software house Topologika (The above to be read in a fake Richard Burton accent). What is the reason for this outpouring of Shakespearian-type doggerel? No less than the release of a new adventure from Topologika.

Called *Avon*, it is stated to be for "students of the bard". Plagiarism on a grand scale is what I'd say, and a good job that old Will's work is all out of copyright to boot. However, if you've got a slightly perverse sense of humour and can actually remember all those quotes then this could be for you.

Avon costs £14.95 on the BBC, which is three quid more than Amstrad/Spectrum versions. A bonus is the inclusion of a new version of *Murdac* in the game pack. An Archimedes version running under RISCOS is also available at £19.95.

Graphics glitches

Perhaps one of the most irritating difficulties faced by Electron owners is the lack of mode 7 graphics.

Screens often appear with strange characters where the colour codes should be. Don't despair though, there are ways to overcome the problem. Of course you need to list the program, so these remedies will not work on most games (sigh).

First, list the program and strip out the colour codes. They are usually in the form PRINT CHR$ (255), but the form PRINT "HELLO", where the space is a colour code also occurs. This should remove most of the garbage from the screen.

However, if the codes do some work, as in highlighting a menu option, another approach can be adopted. This involves redefining the code as a user-defined character. For example, an arrow could replace the highlight code, and another arrow the highlight off. Use VDE23 for this, but you will need help with the colour codes. Getting hold of a BBC user guide for reference makes sense, and will give guidance on other matters too.

Andrew Brown

Electronic expense

Electron owners get a raw deal in many ways, so it's good to see that Topologika has converted its adventures to run in mode 6 for that machine. Less good are the prices, which seem to be higher than the Beeb version. However, beggars can't be choosers, and people don't really appreciate the work that goes into conversions.

Incidentally, I looked at Predator a little while back, so I was a little amused to receive a full review copy, including a quote from this column in the press blurb! I won't pass any further comment on Predator, except that I've given the Electron version to a friend and will give his report as soon as I can.

MSX TRA

Robocop v. Rambo

I now have copies of both *Robocop* and *Rambo III*, and early impressions of both games are very favourable, with *Rambo* possibly being the more playable. With so much new MSX software coming out now, finding the time to play each game properly is quite a task! *Nemesis 3* is another new addition vying for attention, and US Gold has just released the MSX version of *Chicago 30s*, price £9.95 – so no doubt I can look forward to a copy of that too.

It's just a shame that supplies of serious software for the MSX 1 are drying up. If you wish to use the MSX for serious use, then you need an MSX 2 – at least you can then use CP/M and software such as *WordStar*.

Budget buys

I've now had the chance to try a couple of Bug Byte games from Grandslam. The first I tried was *Skyhawk*, a *Defender* type game. It might be only £2.99, but I found it almost uncontrollable. This game is fairly old, and it shows. *Turmoil* was much better. It's a classic platform and ladders game, and although a little dated, it's great fun. You must try to help the hero Mick by filling oil cans, emptying the oil down the grid at the bottom of the screen, and then building a car to escape in. Tools can be collected and put in the workshop, thus earning you a bonus. Of course there are baddies trying to stop you completing the task.

I found *Turmoil* a pretty tough game, and although there are only 26 screens, it will keep you amused for hours. Graphics are well drawn, and sound effect reasonable. At £2.99 it is good value.

Keith Neal

Manual exposure

Would-be MSX programmers looking for detailed information on the TMS 9929A processor, the video chip used in the MSX 1, need look no further. I've just received info about a new reference manual giving details on all the workings of this chip, and how to access it via the Z80.

The manual is primarily designed for use with the Memotech MTX, but as it shares the same main processor and video processor as the MSX (and Tatung Einstein), the publication has been written to suit these machines. It covers mode switching, plotting points, moving sprites etc, and allows the user to create his own graphics library. It certainly seems a comprehensive manual, covering all aspects of the TMS 9929A chip.

A section that would certainly be useful deals with dumping the various screens to printer, even covering graphical bitmapped screen dumps. Differences between the three computers covered are discussed, and it's claimed that all machine cope listings should work on the MSX without modification. The Advanced Reference Manual *is £15.00, and it can be obtained from AFW software, 24 Blenheim Place, Larbert, Scotland, FK5 4PP.*

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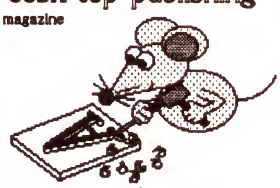

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HELP!

Make the connection

I have been using a database on the Spectrum 48K for more or less five years now and have been thinking a lot lately about transferring the data files to my Atari ST.

The program I use on the Spectrum is Campbell System's *Masterfile 48K*. Since I have got an Interface 1 for the Spectrum, I suppose it would be easiest if I sent the files to the ST via the RS232 built into the Interface 1. I bought a cable to link the two together as well as a null modem cable. Since I have absolutely no idea whether this is the correct set-up (the guy at the shop told me there is only one kind of null modem), I enclose a scheme of the connections of the null modem at the end of this letter. I did have to plug it in the other way around because of the male/female connectors.

What I have done so far is setting the baud rate on the Spectrum to 300 and then trying to send over a few REM statements in a program (Save *"B" according to the manual). I do have to use the b channel don't I?. There is also a text channel but that is reserved for listings.

On the ST I have been using *Uniterm*, a program which has *XMODEM*, *Kermit* and ordinary ASCII transfer capabilities. I have tried all of these but to no avail. I have set it to 8 bits, no parity and 1 stop bit. For data flow options I get XON/XOFF, RTS/CTS and none, which should I use? Should I choose full, echo, or local (I've used local so far)? There is an option in Uniterm which lets one choose RS232, terminal, graphics or file transfer. So far I have taken file transfer. Which protocol should I use and how should I configure it? There is a further problem with Kermit file transfer: there is a whole page of variables which can be redefined. I haven't touched any of these, but could that be the reason why it doesn't work?

When I send something from the Spectrum. I press *alt c* (start file capture) on the ST. The Spectrum then just sits there with a black border until I press *delete* and the ST just gives time out errors.

I though that a lot of British computer users would have a need for this kind of thing, but judging by your column nobody else seems to want to transfer data from the Spectrum to the ST. I hope that you can help me with this problem because I don't fancy having to type in 130K of data!

Thierry Kumps, Overijse, Belgium

• First, rid your mind of this idea of the 'null modem' as an entity – it's a concept. You can't buy a null modem, neither is there only one type of null modem. The phrase describes the connection of two computers in order to serially transmit data without actually using an electronic modem to encode, transmit and receive the data. The physical reality of the null modem is simply a cable connecting the serial ports of two computers together.

So you want to swap data between the Spectrum and ST. Are you sitting comfortably? Then I'll begin...

You'll need to make (or have someone put one together for you) a cable with the following connections: 1 and 1, ST 2 to Spectrum 3, ST 3 to Spectrum 2, ST 4 to Spectrum 5, ST 5 to Spectrum 4, and 7 to 7. Use the correct connectors for each machine's interface and *don't* turn the cable around!

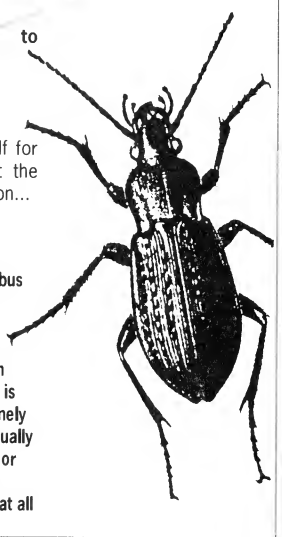
Boot the ST using the supplied system disk. Select *RS232* configuration from the *desk* menu and make the following settings 1200, no parity, 8 bits, strip bit on, XON and RTS off. Exit the *desk* menu. Boot *Uniterm* and configure it to the same settings that you used for the port (as outlined above). The reason for setting the RS232 port using the ST's own utility is that *Uniterm* occasionally decides to set up the port incorrectly. Buy a Spectrum comms package that supports *XMODEM*. This is a protocol which facilitates easy file transfer. Select *XMODEM* from the Uniterm menu and the same for the Spectrum. You should now be able to transmit and receive without problems. If you do experience difficulty, check the solder connections of the cable and reset the ST's RS232 port using the desktop utility.

BUG OF THE WEEK

In *Express* 13 the 'Mad Mueller' tells of an endless loop on mission 5 of *Elite* (version 1.3 ST). My version is 1.02 and I have also run into this looping problem. I returned my disk to Microprose with a letter explaining the bug. Six weeks and three 'phone calls later I eventually received a replacement. The replacement is still version 1.02 and still looping on mission 5. Can anyone help or should I just melt down the £25 disk and beam it to another galaxy?

S P 'Street Car' Kowalski, Hucknal, Notts.

• Substitute yourself for the disk and adopt the latter course of action...



• Carabus cancellatus While resembling Carabus granulatus, this beetle nevertheless offers an altogether different sensation when trodden underfoot. The species is renowned for its extremely short memory span, usually doing everything thirty or forty times before it remembers it's done it at all

TIP

Anatomy class

I read your reply in *Express* 35 with advice to buy *Anatomy of the 1541 Disk Drive*. On page 429, the backup program 4.1.3 would not work properly on my C64 as printed. I found that I had to delete lines 320, 330 and 340. On line 350 use only B=50%(T). On line 360 use only Print B and on line 380 insert before Next B%(T,S)=-1 and after Next S=S+1. In line 140 delete Z(Y). In line 560 delete For I=0 to 7:Z(I)=2I:Next. In line 500 Gosub 620:Goto 580.

I found these changes by using a print after each line number to see what was happening when the program was running. I must say that apart from the bugs in the program, the book is a very good one to have.

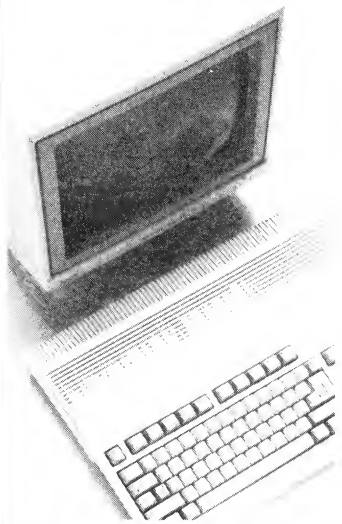
J R Mordell, Stoke Newington, London

TIP

Does your memory fail you?

A lot of people seem to be having problems loading some of the games on the Amiga 500 that object to one megabyte of memory being installed. I think I may be able to help. I have a PD memory allocation utility that will work with commercial software. It effectively makes the computer ignore the extra memory without removing it from the Amiga. So if any Amiga owner would like this great utility (and here's the punchline...) all they need to do is send me a blank disk and return postage with their address and I'll send them a copy.

G S Crook, 131 Green Drift, Royston, Herts SG8 5BL.

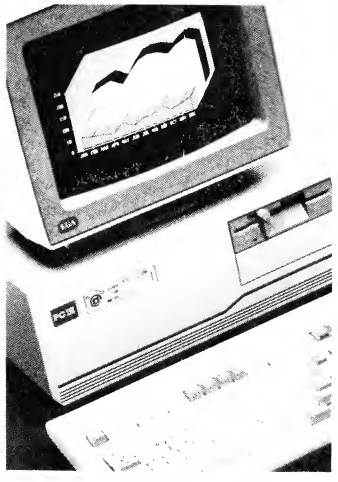


• Having trouble loading 0.5Mb games into 1Mb Amigas? G S Crook has the answer...

HELP!

Wot computer

I have decided that I would like to buy a PC – can you recommend a good one to me for £700 or less. As well as using it with a word processor and database, I would like to use it to help me with my A-level studies: maths, physics and chemistry.



• If you're looking for a good, budget PC you could do worse than check out the Opus range

Thanks for your help and a great mag, but what's happened to the binders?
John Hone, Hampton Hill, Middlesex
• Any PC will perform readily with the applications you wish to use. You could do worse (well...) by taking a look at the Amstrad range. They're of reasonable quality and readily available. I would examine the glossies emanating from the Opus camp. Good quality, cheap, fully featured machines which are, above all, *expandable* – believe me, you may be quite happy with a basic machine now but in a year's time? Two years? Take a tip from your wise old Uncle and buy a machine which will grow with you. Call Opus on 0737 765080.

HELP

Double density?

I own an Atari 130 XE with an XF551 disk drive. The adverts for the drive claim that it can operate in true double density mode but as yet I've been unable to make use of this feature. Can you please tell me how I can get double density storage on my disks?
Asif Iqbal, Portland Sq., London
• It is possible to make use of the double density feature of the drive but you must be using a disk operating system that can store and retreive data in double density format. SpartaDos X is such a DOS. It has a command structure which is very similar to MS-DOS, costs £49.95 and is available from Frontier Software. Call Frontier on 0423 567140.

BUG

Kicking themselves

On *Football Manager 2* for the Commodore Amiga, after you have taken around one hour to get to the end of the season or you have won one of the two cups, the game crashes and you have to start over. I was given three of these games and they all had to go back to the software company.
Brian Smith, Dundee, Scotland

HELP!

Menage à trois

I own a 1040 STF and wish to know if it is possible to use the A520 Amiga modulator to give me the signal required for videoing the screen. If so, what would be the connections required?
I have a second disk drive for the 1040 it is an Evesham Micro's RF302R. I wish to know if I could somehow wire up a connecting lead to enable me to use it on an Amiga 500.
The third problem may be harder to resolve. The 1040 also has a built in genlock device, it's a Rendale A8701. This device works but without the picture being wholly synchronised. I have been told that it requires software to do this. Despite many 'phone calls to firms dealing in Rendale genlocks, I have so far found none able to help. You are my last hope.
Stephen McGill, Kilmarnock, Scotland
• **1.** No.
2. The drive mechanisms are, to all intents and purposes, the same. Call Evesham on 0386 765500, which – for a small consideration – should be able to help with a suitable cable.
3. If any techtippers can help with problem number three, call your Uncle and I'll pass on the guff...

TIP

Faster LocoScript

Whilst it is not possible to speed up *LocoScript* on the PCW directly, there are several short cuts which can be taken.
First is obviously to use the Setkeys – [+] and [-]. For example, [+] i sets italic and [-] i de-selects italic: [+] sr selects superscript and [-] sr de-selects superscript. The letters you type for these short cuts are the ones which appear in upper case in the relevant menus: Italic and SupeRscript.
But there's more. Any item in any menu can be selected either by use of the cursors or, alternatively, by typing the initial letter (or capitalised letter) of the item. For example, on the *LocoSpell* menu, pressing m immediately selects the "mark this word correct" option without having to cursor down to it. Press Enter and continue.
This works for all menus. Pressing Tab, incidentally, moves you to the next section of any menu.
Rev. M Paynter, Essex

• The Rev. Paynter has some tips for those PCW LocoScripters finding the program too slow

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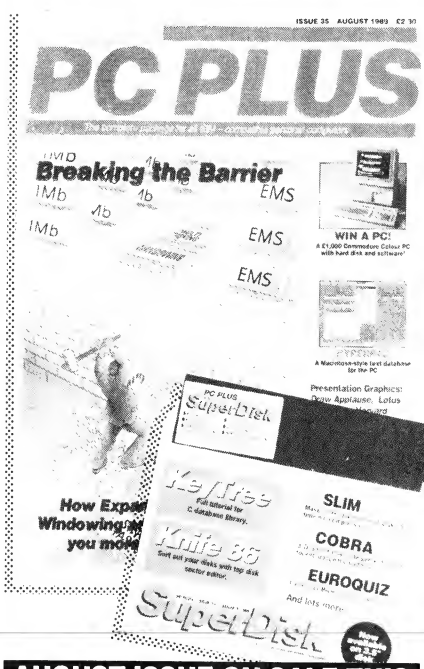

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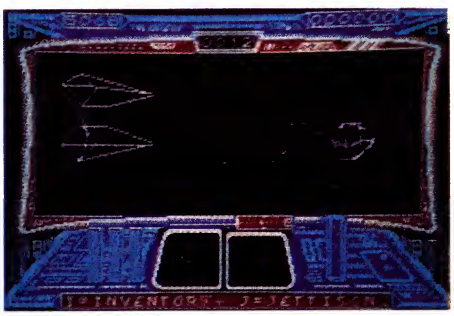
Rik Haynes Klings-on to the misconception that somebody actually reads his work...

STAR TREKKIN' ACROSS THE UNIVERSE



STARGLIDER II
Rainbird/Microprose

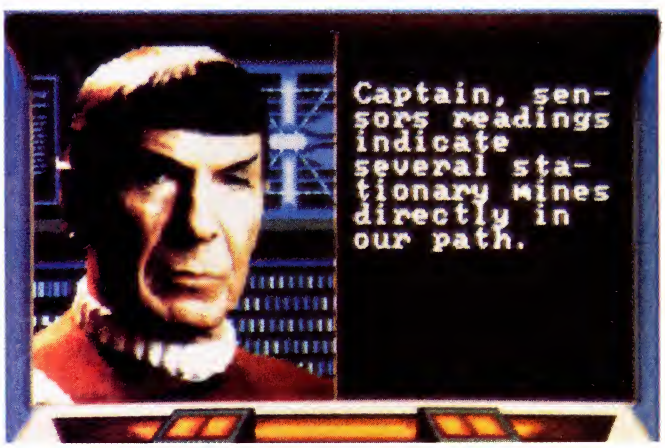
Starglider II is finally going to make it onto the humble Spectrum next month. Highly regarded on the ST and Amiga, it'll be interesting to see how well this solid 3D strategy shoot-'em-up converts over to the Spec's monochrome vectors. *Starglider II* is also out on PC and Macintosh in the Autumn.

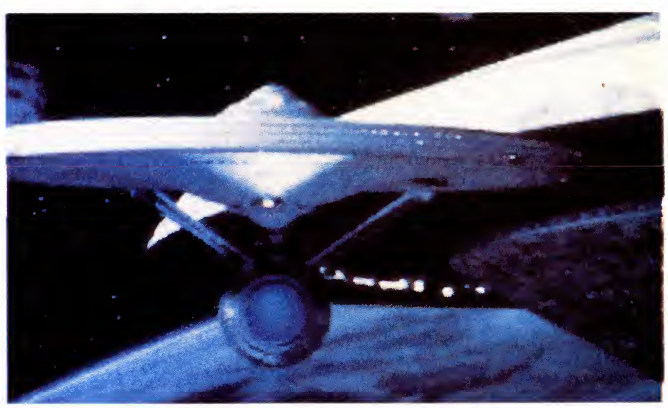
FIENDISH FREDDY'S BIG TOP O' FUN
Mindscape

All the fun of the fair again folks, as you're thrown through six slapstick circus events – knife throwing, juggling, human cannonballing, trapezes, tight-rope walking and high-diving – in attempt to save the Big Top from the Big Boys. Fortunately *Fiendish Freddy's* blessed with a brilliantly black sense of humour. Out soon on ST, Amiga, PC.

STAR TREK V: THE FINAL FRONTIER
Mindscape

Yes, another of this year's major movie releases is due for computer game conversion to 16-bit micros – including the Macintosh – later in the year. Taking the role of Captain James Tiberius Kirk, you'll have to boldly go where no-one has gone before – to the software shop to buy it! VGA PC version of *Star Trek V* shown.





RAINBOW WARRIORS
Microstyle/ Microprose

The world's first "environment friendly" game, *Rainbow Warriors* simulates seven campaigns of Greenpeace members over the last five years. Let's hope this "action" game is superior to the awful BBC2 drama/documentary shown a couple of months back. Little bit of politics, my name's Rik Haynes, thank you and goodnight.

HARLEY-DAVIDSON: THE ROAD TO STURGIS

Mindscape

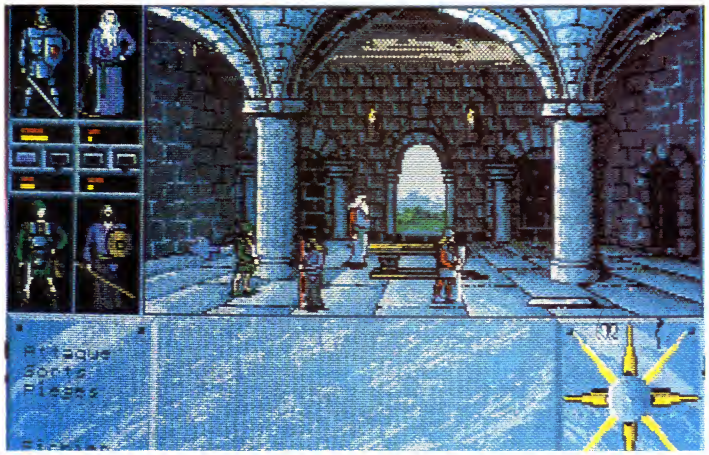
Chill out man, and grab a ride on a 1340cc Hog and go for Harley heaven in this bike-racing simulation due for release later in the year on ST, Amiga and PC. You'll have to take on the other high-road Harley Hogs before you reach the *real* race in Sturgis, South Dakota.

RAINBOW ISLANDS

Firebird/Microprose

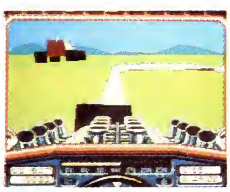
The follow-up to the brilliant cult cutie Taito coin-op, *Bubble Bobble*, *Rainbow Islands* is being programmed by Graftgold, the team responsible for such C64 hits as *Gribbly's Day Out*, *Paradroid* and *Uridium*. *Rainbow Islands* is due for release in September on Spectrum, C64, CPC, ST and Amiga.

DRAKKHEN



Infogrames

Innovative French software developer Infogrames could just have another winner on its hands with *Drakkhen*, a role-playing arcade adventure co-designed by role-playing guru Gary Gygax. Incorporating an impressive collection of features from free-moving solid 3D landscapes to little touches like a proper day/night cycle, *Drakkhen* looks set to stun 16-bit gamesters in the Autumn.



STUNT CAR RACER

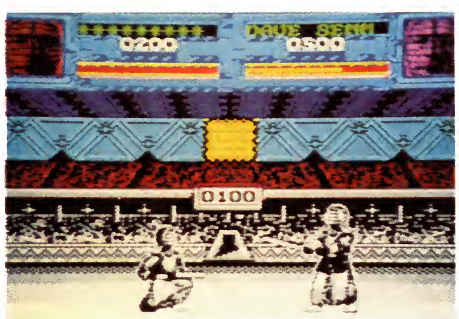
Microstyle/ Microprose

Stunt Car Racer is a stunt car racing sim programmed by the talented programmer Geoff Crammond, which will take you round eight tough tracks and four difficult divisions before you'll reach the "Super League". *Stunt Car Racer* is out in September on Spectrum, C64, ST and Amiga – with a PC version following in October.

ORIENTAL GAMES

Firebird/Microprose

Oriental Games is "the ultimate martial arts fighting simulator" incorporating four different kick-'em-to-death-'em-up styles – Kung Fu, Hollywood Rules, Sumo Wrestling and Kendo – in a fight to beat up 24 other opposing entrants for the title of "Grand Master". *Oriental Games* is out in September on Spectrum, C64, CPC, ST, Amiga and PC.



OIL IMPERIUM

Rainbow Arts

If you're a Dallas fan, *Oil Imperium* could just suit your strange sense of enjoyment, as you strive to be your very own computerised JR – buying, selling, trading, spying, merging, and sabotaging your way through the oil biz. *Oil Imperium* is a strategy arcade game due for release on C64, ST, Amiga and PC in September.

BASKETBALL

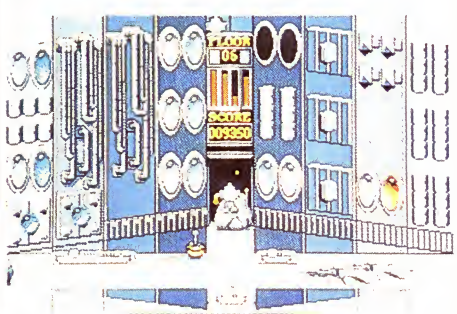
Mindscape

Omni-Play *Basketball* is a fully-featured Basketball sports sim which includes Training Camps, Minor Leagues, Team Stats, Slam Dunks, Yank Commentators and "fast paced on-court action" – plus the ability to enhance play by purchasing future expansion modules for Pro Leagues, College Leagues and Fantasy Leagues. *Basketball* is out soon on 16-bit formats.

G.NIUS

Lankhor/ Infogrames

An update of the earlier ST only game, "new improved" *G.Nius* is due for release shortly on ST and Amiga. As G.Nius, you'll have to search a decrepit space ship in a quest to find the exit. Another French arcade adventure from Paris-based games software developer, Infogrames.



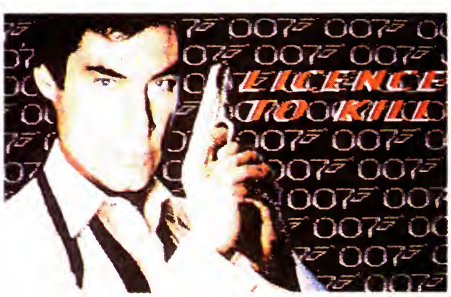
● Top of the bill this week is Microprose's brilliant *Sentinel*, out at last on the PC, together with another latecomer – Amiga *Powerdrome*. Ah, but does James Bond shoot himself in the foot in *Licence to Kill*? Why is *Citadel* like a Marks & Spencer anorak, and can Fielding Mellish ride a Honda C90, let alone an RC30 F1 racer...?

LICENCE TO KILL

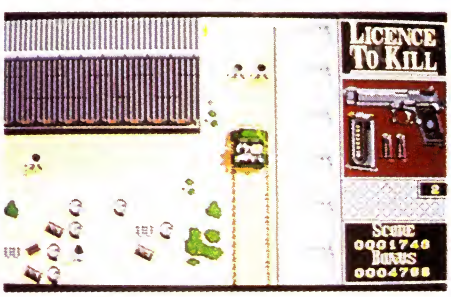
Domark

Amiga £19.99dk. Also on Spectrum, C64, CPC, ST
Out soon on PC, BBC

Licence to Kill is Timothy Dalton's second outing as the infamous British secret agent, James 007 Bond, in the movie and Domark's fourth attempt at creating a Bond computer game, so has it got a Licence to Thrill?



• Bond looking good on the Amiga



• Making tracks towards the bad guys

GAMEPLAY You play the role of Bond in a six-stage event taking inspiration from three "scenes" from the movie: chasing the baddie drug-dealing opponent Sanchez, Bondesque underwater action avoiding sharks and the like, and finally catching up with the elusive Sanchez in your crop duster!

GRAPHICS AND SOUND The backdrops and sprites are colourful and well defined, but the sprites are rather minuscule. Sampled sound spot-effects, and a short rendition of a Bond soundtrack make up the audio.

OTHER VERSIONS The ST version is much the same to look at and play. We haven't played any of the other versions yet – updates as soon as we have.

EXPRESS VERDICT *Licence to Kill* isn't stunning, original or particularly addictive. It is better than we expected, though, and it's reasonably good fun to play. The six stages of the game help to keep the interest going.

Not only the best Bond film in ages but also the best Bond game thus far (although we know that's not saying a great deal!).

★ ★ ★

Rik Haynes

SENTINEL

• A map of your next landscape – including the position of the dreaded Sentinel

Firebird/ Microprose
PC £24.99
Also on Spectrum, CPC, C64, ST, Amiga, BBC

***Sentinel* has finally down-loaded to the PC, some three years after it first appeared on the humble old Beeb...**

GAMEPLAY It's great gameplay all the way as you guide your way through 10,000 surreal landscapes in your quest to destroy the Sentinel. The name of the game, as your travel around this strange world, is to manipulate energy by teleporting, absorbing the trees populating the scene, and creating the odd boulder or two – while constantly avoiding the gaze of the Sentinel.

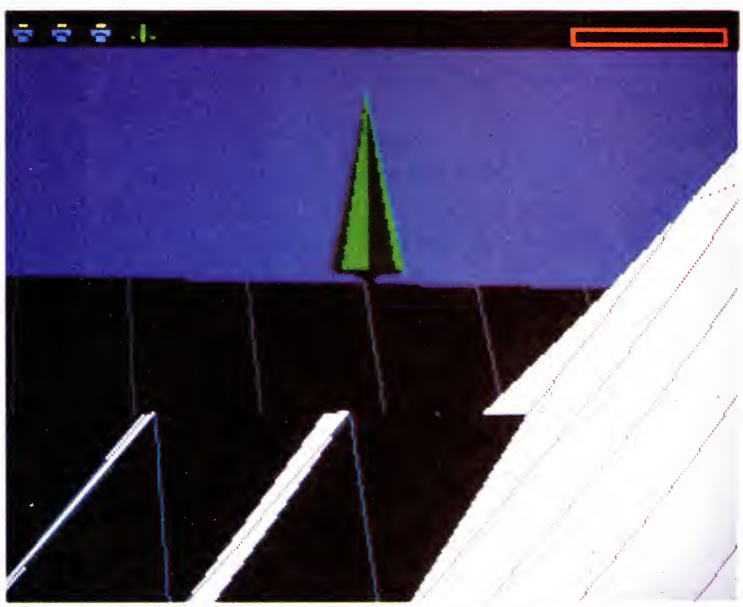
GRAPHICS AND SOUND The surreal-surround landscapes are excellent. The screen update is fast enough to not notice it too much. Thankfully both CGA and EGA graphics modes are supported – although it doesn't make much difference with *Sentinel* 'cause the graphics are just there to support the superb gameplay. Audio consists of the odd warning beep, etc.

OTHER VERSIONS All the versions of *Sentinel* are audio-visually similar, with slight speed improvements in the screen-updates on the ST and Amiga. The C64 version is probably the slowest due to its slow processor.

EXPRESS VERDICT Strategically surreal, infuriatingly addictive and totally original, the only disappointing thing about the PC version of *Sentinel* is the time it took to come out. An instant classic.

★ ★ ★ ★ ★

Rik Haynes



• Stuck in a hole. You can't absorb that tree until you can look down on the square it stands on

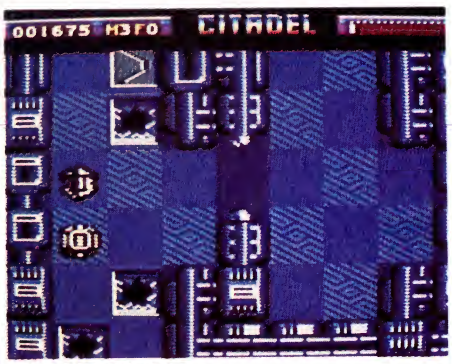
CITADEL

Electric Dreams

C64 £9.99cs, £14.99dk

No other versions planned

Cavort hither and thither, vapourise various foe, amass points, yawn frequently, then crash to the floor in a deflated heap of utter boredom...



• Draughtboard drudgery

GAMEPLAY Emanating from a hole in the space time continuum – actually an ignominious rent in the lurid backdrop – you caper violently, destroying anything even vaguely on the side of the opposition. There are tunnels to pass through, laser barriers to traverse, points to amass and tools to collect which will help in your task (just what that task is, I didn't manage to ascertain).

GRAPHICS AND SOUND The backdrop looks like something you played draughts on around the nursery fire – it's dreary, uninspired and boring. Your craft – the main sprite – appears to be modelled on a button from a Marks and Sparks anorak and the rest of the 'crew' aren't much better. Sound comprises a reasonable collection of spot effects which valiantly try to lift the game from the pits, but fail miserably.

OTHER VERSIONS No other versions are in the pipeline.

EXPRESS VERDICT If this was one of your own creations using the *Graphics Construction Kit* from Palace Software then you'd probably be quite happy with it. Your friends would want to play it, and at least you'd have had the pleasure of design and implementation. As it is, a 'professional' product of this nature deserves to gather dust on W H's shelves – pass it up or pay the price...

★

Fielding Mellish

RVF HONDA

Microprose

ST £24.95dk

Available soon for the Amiga

Climb aboard Honda's Formula 1 motorcycle for a hair-raising whizz around several of the world's top circuits, with the wind in your hair and the tarmac grazing your knees...

• Seconds away from the start, and an orgy of clutch-burning, tyre-smoking, knee-scraping action

GAMEPLAY You take control of Honda's RC30 750cc formula 1 motorcycle in a bid to leave the other competitors in the dust at Donnington, Brand's Hatch and many other top motor racing circuits around the world. You begin with solo practice sessions around the track of your choice and it is here that you can develop the skills necessary for real racing. Learn the correct line to take through chicanes, hairpins etc, master gear changing and braking, and then you're on the starting line with the chequered flag fluttering in the breeze and the collective exhaust fumes from twenty other motorcycles destroying your lungs.

GRAPHICS AND SOUND Graphics are thoughtfully drawn and well implemented. Smooth movement of all riders including your own ensures good control of your rider. The game features workmanlike, if not exactly inspired, spot effects which enhance the race. The sound of the motorcycle changing through the gears is particularly good.

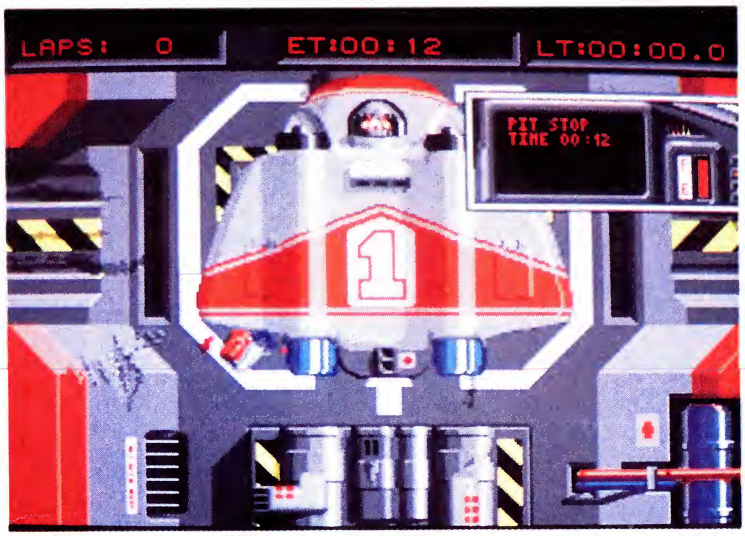
OTHER VERSIONS An Amiga version will be released in approximately two weeks.

EXPRESS VERDICT It's a motorcycle race game. Stating the obvious rather, but then the game *is* obvious. There's no subtlety, you simply mount and ride. If it's still a couple of years until you can get your behind into the saddle then this may be for you, but if you're already frightening pensioners with the roar from your C90, use the moolah to buy a ticket to the next Donnington meet.

★ ★ ★

Fielding 'Wild One' Mellish

POWERDROME



• It's the pits: Learner drivers can expect to spend a lot of time here...

Electronic Arts

Amiga £24.95dk

Also on ST

Welcome to the *Powerdrome*, it's a long way from home...

GAMEPLAY *Powerdrome* is a sci-fi racing sim with you controlling a Typhoon "hover" craft around a series of six confined race courses, in an attempt to win the sought after Cyberneufe trophy. Playing solo or up against four other cyber-pilots, you'll fly through dangerous caverns, tunnels and crusher gates in your attempt to run drome your advantage.

GRAPHICS AND SOUND The first-person solid 3D race-scapes flow smoothly around and through the screen, really giving the feeling of being on-track. The craft design is good too. Sound FX for your powered-up Typhoon and subsequent side-collisions are superior to their ST counterparts, and help increase your empathy towards flying your deck.

OTHER VERSIONS Just as good on the ST, but a little more difficult to control.

EXPRESS VERDICT Original and well implemented, perhaps the only thing missing from *Powerdrome* is heart-stopping excitement. Flying around a bunch of race mazes can be tiring after a while, even considering their individual attributes and the dual machine, head to head option (if you can implement it). It's a pity you can't blast the opposition out of the skies. Still a cut above the average rac-sim, though.

★ ★ ★ ★

Rik Haynes

• View from the cockpit as you race through the mazes

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COMPUTER CHAOS

Another collection of real life computer cock-ups from the archives of Mel Croucher

Liverpool

Almost the entire blame for the recent Passport Office strike must be due to the introduction of computers.

Before December, staff in the Liverpool office each process over 150 passports by hand daily. Since the arrival of the computers "to accelerate the service", passports dribble out at the rate of 60 a day, because very few of the staff have been taught to type!

The machines have a memory bank that can cope with a turnover of four weeks, and sure enough, after four weeks they overload. The backlog of passport applications hits 200,000 before strike action is called. It now stands at half a million.

(Joanne Brownrigg, Civil & Public Servants Association)

Great Malvern, Airstrip One

Ian Currie has provided a "safe" computer compiler for the Royal Signals and Radar Establishment, Ministry of Defence, "to facilitate program transformation in the language which cannot cause errors." It is called *NewSpeak*.

Come back George Orwell, all is doubleplus good.

(Electronic Engineering Times)

Bristol Crown Court

Twelve jurors, four QCs, two officers of the Glasgow constabulary and three heroin smugglers anxiously await the decision of a Bristol Crown Court judge at the end of a massive drugs bust trial.

His Worship is no technophobe, and has spent nine hours word processing his ruling on a laptop. Traditionally, he will deliver his judgement via paper and not off screen, so he presses two buttons for a print out and the seven page judgement gets wiped out forever.

Cost: a mere £10,000 in legal expenses.

(London Evening Standard)

Wells Fargo Bank E-Mail

James G Jones, Executive Vice President, Wells Fargo South Bay Service Centre, sends out a personal apology for a message printed out on Equity Line Statements dated Feb. 2nd 1988.

As well as bank records and balance sheets, each customer has received the following statement on their computer print out: *"You owe your soul to the Company Store, why not owe your home to Wells Fargo? Equity Advantage Accounts help you spend your children's inheritance!"*

(Playboy Magazine)

Sout West Regional Hospital Board, England

A directive is issued to the region's hospitals that routine maintenance of computers should include cleaning air conditioning vents.

This is a result of a £30,000 computer overheating malfunction caused by fibres charged with static electricity attracting dust and jamming up the system. The fibres are later identified as being hairs belonging to a staff member with the habit of sleeping on top of a hot air vent.

The staff member is supposed to catch mice, but Sheba the cat has been sleeping on the job.

(Hampshire Chronicle)

Sydney, Australia

On Thursday night the Australian Commonwealth Bank's computer malfunctions, and all customers with Keycards and cheque accounts get every deposit and all salaries credited twice over.

The General Manager of electrionic data processing, Pete Martin, comes clean by admitting "Of couse it's a cock up, it's a vast bloody cock up. The hazards of computing are only limited by your imagination!"

(Sydney Morning Herald)

Connecticut, America

Clerk R B Jones gets fed up of explaining to his firm's accounts department that he has no first names – only the initials R B. When the company goes over to automatic salarying by computer he makes it quite clear on the form that the salary cheque is to be issued to R (only) B (only) Jones.

Sure enough, he is down from that moment on the company's records as Mr. Ronly Bonly Jones.

(Reader's Digest)

Next Week

Printer power

The Express guide to the best printers for you

Bird's eye view

How Budgie is flying high producing free games

Flight of fancy

Transputers makeing the world's most stunning flight sims

SEUCK it and see

Shoot-'em-up construction kit comes to the Amiga

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PRODUCTIVITY SOFTWARE

Organiser	Triangle Publishing	£49.95

JOYSTICK

Atari CX40 Joystick	Atari Corp	£4.99

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The Atari Super Pack is ideal for you if you want to get off to a flying start with the best in entertainment software. The Pack includes a 520ST-FM with ½Mb RAM, a built-in 1Mb disk drive, over £450 of top games and a joystick. If you buy the Super Pack at Silica Shop, we will add our own ST Starter Kit (worth over £200), Free Of Charge. Return the coupon for details.

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The MEGA ST computers are styled as as lightweight keyboard with a separate CPU, connected by a coiled telephone style cable. There are two versions of the MEGA ST, one with 2Mbytes of RAM and the other with 4Mbytes. Each version has a 1Mbyte double sided disk drive built-in to the CPU unit. The MEGA ST's do not come with modulator built-in and must therefore be used with a monitor. With every MEGA ST purchased, we will add the 'Professional Pack' software (worth £384.83) detailed above, plus the Silica ST Starter Kit (worth over £200) both Free Of Charge. Return the coupon for further details.

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ATARI ST

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All prices correct at the time of going to press. E&OE.

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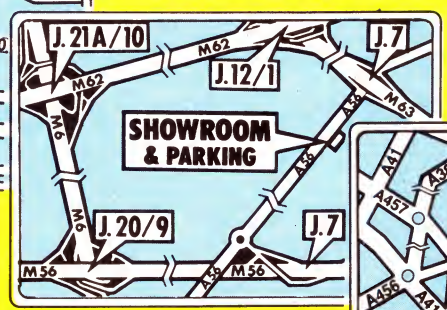

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